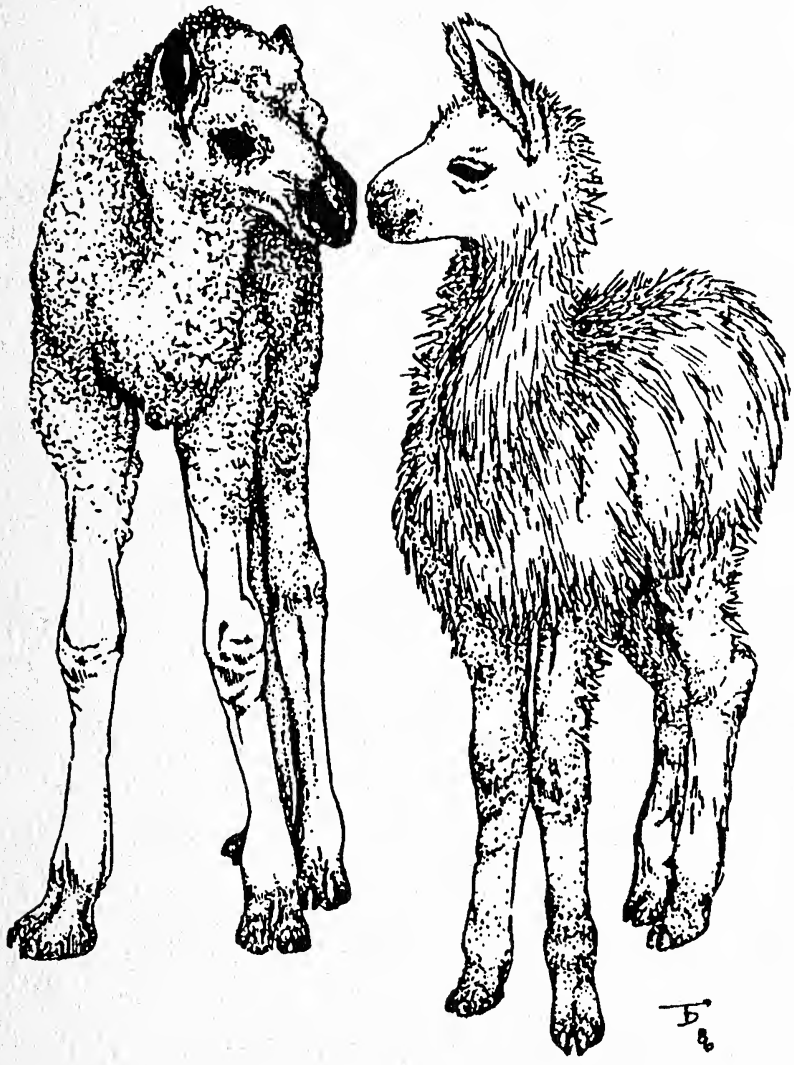
ANIMAL KEEPERS' FORUM



The Journal of the American
Association of Zoo Keepers, Inc.

JANUARY 2007

ANIMAL KEEPERS' FORUM, 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054
Phone: (785) 273-9149 FAX (785) 273-1980

January 2007
Vol. 34, No. 1

Animal Keepers' Forum is published monthly by the American Association of Zoo Keepers, Inc., 3601 S.W. 29th Street, Suite 133, Topeka, KS 66614-2054. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers' Forum . Postage paid at Topeka, KS.

Table of Contents

About the Cover/Information for Contributors....2

Scoops & Scuttlebutt....3 - 5

From the President....6

Notice of Discontinuation of 800#....6

AAZK Announces New Members....7

Coming Events....8

Dive Into Something Wild !! 2007 AAZK National Conference....9

ATC - Setting Them Up to Succeed: Training the Trainer....10 - 14

The Animal Training Committee Reminder on *Training Tales*....14

"ZOO BUMS" 2007 Calendar....15

AAZK Grant Report: The Centre for Animal Rehabilitation and Education (C.A.R.E.)....16 - 19

Bowling for Rhinos: Recipe for Success....20- 21

Survey of American Ichyological and Herpetological Collections....21

ELECTION 2007 *(Duties of Directors/Qualifications for Nomination)*....22

Reactions/Crisis Management Questions....23 - 25

Re-creating Nature: The Making of an Artificial Meerkat Burrow....26 - 28

Chapter News Notes....29

Proximity and Social Interaction of Captive Shoebill Storks (*Balaeniceps rex*) at the San Diego Wild Animal Park....30 - 34

Conservation/Legislative Update....35 - 37

2007 Index for *Animal Keepers' Forum* Vol. 33, Nos. 1-12....38 - 44

Board of Director Election Nomination Forms/Instructions....**BLUE INSERT**

30th Anniversary
1974 - 2004

About the Cover.....

This month's cover features two youngsters from the family Camelidae - a Dromedary camel (Camelus dromedarius) and Llama (Llama llama) drawn by Debi Talbot, a Keeper at the Smithsonian's National Zoological Park in Washington, DC. They are recognized by their long slender legs and a distinctive gait known as pacing, where the front and back legs on the same side move forward together in a rocking motion. A camel is able to drink up to one quarter of its weight in water at one time, and can store the water for several days. Closable slit nostrils keep out the blowing sand of their desert habitat. Camels are the only mammal with oval (instead of circular) red blood cells. This adaptation allows the red blood cells to expand and not rupture when the camel drinks large quantities of water. The llama is the domesticated decendant of the wild guanaco and vicuna and have been bred in the Andes since the time of the Inca civilization. Domestic camelids provide people with hair, milk and transportation. The camel family originated and evolved in North America with dispersals over land-bridges to South America and Asia. Thanks, Debi!

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size **no greater than** 5.5" x 8.5" (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white **or** color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 785-273-9149; FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com<

Deadline for each regular issue is the 10th of the preceding month.
Dedicated issues may have separate deadline dates and will be noted by the editor.

Articles printed do not necessarily reflect the opinions of the *AKF* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

E-Mail Addresses: You may reach Barbara Manspeaker at AAZK Administrative Offices at: aazkoffice@zk.kscoxmail.com< You may reach Susan Chan and *Animal Keepers' Forum* at: akfeditor@zk.kscoxmail.com<

AAZK website Address: www.aazk.org

BFR Website: http://aazkbfr.org

Scoops & Scuttlebutt

Attention All AAZK Chapters - Watch Out for Your Online Recharter Info

Those individuals who are the email contact person for their Chapter should have received an email communication from Administrative Office containing the 2007 Recharter Packet. The forms are being sent electronically this year to reduce costs and increase efficiency in the recharter process. These emails were sent out to all AAZK Chapters the first week of January so you should already have it by the time you read this reminder. Please be sure to follow all instructions carefully. If you have NOT received a Recharter Packet at your Chapter's email address, contact Barbara Manspeaker at 785-273-9149 or via email at aazkoffice@zk.kscoxmail.com< The deadline for return of the completed packet, including recharter fees and a copy of your Chapter's closing bank statement for 2006, is **1 March 2007**. Failure to return the completed packet and fees by the deadline will result in a $200 late fee. Your cooperation is greatly appreciated.

Donations Bolster AAZK's Financial Future

The AAZK Board of Directors and the staff of Administrative Office would like to extend their thanks to the following for their donations to the Association: Oklahoma City Zoo Association of Zoo Keepers - $1,000.00 to be utilizd as most needed; Indianapolis Zoo AAZK Chapter - $2,000.00 for the general operating fund; and the St. Louis AAZK Chapter - $1000.00 to be used as needed.

Additionally we wish to acknowledge the donation of $1250.00 from the Nashville Zoo. Nashville Chapter President Jessica Huff writes: "We had intended to use our Chapter funds for this donation but when Mr. Schwartz (Nashville Zoo President) found out he wanted to help and wrote a check from the zoo so the money we raised could continue to go to conservation efforts. Within a day of the email regarding AAZK Inc.'s financial situation, he also joined as an Institutional Member. I think it is a great tribute to the mission of AAZK and the importance of its work. We hope this contribution helps."

Not only will the contribution certainly help, but it is most gratifying to see this kind of appreciation for an AAZK Chapter's conservation efforts and such support by their zoo's administration. Thanks again to all who have donated to AAZK in our time of financial need. Such support will insure that our mission will continue to move forward.

Study Endangered Cats in Mexico

In March 2007 the Dallas Zoo will be conducting its 21st Wildlife Research Expedition to the Los Ebanos Ranch in rural northeastern Mexico. Expedition participants will have the opportunity to study the behavior and ecology of small endangered cats and birds of prey. The Dallas Zoo's Wildlife Research Expeditions offer paying volunteers a chance to work in the field on research projects or conservation programs. Five to seven individuals will be chosen to participate in the research study in Mexico.

The participants, working with field biologists and local assistants, will help capture and radio-collar ocelots and jaguarundis and will aid in radio-tracking the cats to determine their home ranges, habitat use and population densities. Populations of small wild cat species have declined dramatically in the United States and Mexico because of human encroachment and loss of habitat. This research study will help scientists develop a conservation strategy to preserve these cats in the wild. A second element of this Wildlife Research Expedition will be capturing raptors, or birds of prey, to assess their migratory patterns and nesting behaviors. Participants will take data on the birds, band them and release them.

The study site is the privately-owned Los Ebanos Ranch on the Gulf of Mexico in Tamaulipas. The ranch includes 2,000 acres of tropical deciduous forest, 500 acres of mangrove forest, 1,500 acres of

grassland and more than two miles of undeveloped beach. The ranch is also home to many species of exotic birds, including Amazon parrots.

The trip will be led by Sue Booth-Binczik, research technician at the Dallas Zoo. The on-site project leader is field biologist Arturo Caso, who has been studying endangered cats in Mexico for many years. No experience is necessary; on-site training will be provided. Conditions on the ranch are luxurious for a field study! Participants will stay in attractive lakeside bungalows with toilets, showers and electricity. The ranch cooks prepare three meals each day, and water on the ranch is purified well water. The cost of the trip is $1,700, including roundtrip transportation to the study site from Harlingen, Texas. (Participants must get to Harlingen on their own.) Some trip expenses are tax-deductible. For exact trip dates and more information, contact Dr. Booth-Binczik at 214-671-0777 or sbooth@mail.ci.dallas.tx.us.

Help AAZK Earn Extra Income via Amazon.com and GoodSearch.com

If you are someone who shops for your books, CDs, DVDs, etc at amazon.com, you have a great opportunity to help put some money into AAZK's bank account as you shop. All you need to do is go to the AAZK website (www.aazk.org) and click on the amazon.com logo on the righthand side of the AAZK home page and you are ready to shop. And remember a minimum of 4% of your purchase price will come back to AAZK, Inc. For any nonprofit, "passive income" (income which costs you nothing in manpower or resources to generate) is a wonderful way to secure extra funds to help support AAZK's programs for continuing education, conservation, resource publications, etc. So the next time you plan to shop online at amazon.com, please enter through the AAZK home page - it's just another way you can help your professional association prosper and grow.

Another opportunity to raise "passive income" for AAZK is by using GoodSearch.com when you are searching the web. This ia a Yahoo-powered search engine and for every search performed the Associastion earns a penny. AAZK National is already signed up. So start spreading the word. Checks are cut to the non-profit once a year (as long as the minimum amount is $100, otherwise it rolls over to the next year). And you can see how much AAZK is earning in real time. So far our total is $5.87! (as of 12/12/06), but if we all start using GoodSearch.com when we are searching the web, this figure should go up quickly. As an example, The Elephant Sanctuary (as of this same date) had earned $2100! GoodSearch estimates that a medium-sized organization (1000 members) each doing two searches per day could earn as much as $7300 in one year! Please make sure you are doing legitimate searches as groups doing fraudulent searches will be barred from earning money on this site. Happy searching on GoodSearch.com!

AAZK Grant Programs!
Travel, Conservation, Research, and Professional Training

The Geraldine Meyer/AAZK Professional Travel Grants

A total of $2,000.00 is available annually. Grants are awarded twice a year, in May and November. Applications, from new and experienced keepers, are evaluated on their merit based on the member's submission of all requested materials. Awards may range from $1,000.00 to $250.00 or less depending on need. Applicants are encouraged to solicit additional funds from their institution or other sources. Applicants with other committed funds, or in-kind support (time off) will receive slight priority but all applications are encouraged.

Applications for mid-year consideration are due by February 1 of the calendar year; applications for end of the year consideration are due by July 1 of the calendar year. Money will be available upon notice to the recipient. Winners are required to submit an article to the Forum on the workshop or research they participated in.

Advances in Animal Keeping Course Grant

AAZK awards $1,000.00 to the winning applicant to attend the new Advances In Animal Keeping Course offered by AAZK and AZA through the AZA professional schools program. Applications are due by July 1 of the year prior to the one in which the applicant wishes to attend this course.

CPR Grants
The Conservation, Preservation, and Restoration Grant awards up to $1,000.00 once a year for projects oriented toward all conservation, preservation, or restoration of habitats/species with a preference for projects taking place in the U.S. but not limited to this. Applications are due June 1 of the calendar year for funding the following year.

Research Grants
The Research Grant awards up to $2,000.00 once a year for AAZK member-driven research projects, small or large! Applications are due June 1 of the calendar year for funding the following year.

Information on the AAZK grant program is available on the AAZK web site or by contacting the Grants Committee Chair at: shelly.roach@columbuszoo.org or (614) 724-3667.

From the AKF Editor.....

I would like to thank all those who contributed to the pages of *Animal Keepers' Forum* this past year. Your articles, research papers, news notes, committee reports, Chapter updates, etc. have kept the AAZK membership up-to-date about what is happening within the zoo world, in AAZK, and in our profession. Special thank-yous to our cover artists for sharing their artistic talents through the covers of this journal. Original keeper artwork is one of the things that continues to make *AKF* unique among zoo publications.

In 2006 we reluctantly said good-bye to two long-time columnists - Diana Guerrero of the Animal Behavior Concerns and Solutions (ABC's) column; and Georgann Johnston who served as coordinator for the Legislative/Conservation Update column. They had both been involved in *AKF* for at least ten years and we thank them for their contributions and dedication over that time. We thank Bill Baker for his continuing contributions to the Reactions column and also his articles that were featured in the People Skills for Animal People (PSAP) column. *AKF* Associate Editor Jolene Hamrick will continue to edit and contribute to the PSAP column so look for more useful information in upcoming months.

Jolene was also responsible for putting together the 2006 *AKF* Index that may be found at the back of this month's issue. Putting together such an index is a daunting task and we thank Jolene for her efforts on its behalf.

Associate Editors Kayla Grams and Mark de Denus continue to provide insight and support to me as Managing Editor and I thank them both for their long-term commitment to AAZK and *Animal Keepers' Forum*.

In 2007 we will begin featuring the Animal Training Committee (*Training Tales*) and Enrichment Options columns on alternating months. The field of enrichment and training continue to grow in importance in captive exotic animal care and we hope these two columns will give you lots of good information, encouragement and food for thought.

I would like to thank Executive Editor Ed Hansen and the AAZK Board of Directors for their support and encouragement with the *AKF*. I would especially like to thank Barbara Manspeaker, AAZK Administrative Secretary--for beyond the myriad of duties she performs for this Association, she also serves as the *AKF* proofreader! Her services in so many areas are invaluable to AAZK and it is a pleasure for me to come to work each day when I know my best friend is at the next desk.

If you haven't ever contributed something to *AKF*, make 2007 the year to do so. We are still looking for someone interested in taking on the Legislative/Conservation Update column so let me know if you are interested. Again thanks for all of your support in 2006 and I look forward to a challenging and rewarding 2007!

--Susan Chan, AKF Managing Editor

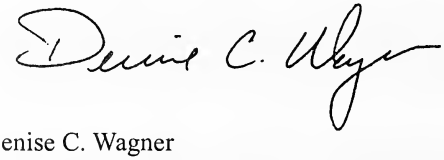
AMERICAN ASSOCIATION of ZOO KEEPERS

From the President

Happy New Year! I hope the New Year finds everyone happy and healthy. Two thousand-six was a year filled with changes for AAZK and 2007 will continue that trend. We are slightly better off financially, however there is still concern for our future. The influx of money into our association and the outflow of it as well is still a concern. Ed Hansen put together a great PowerPoint® presentation that he presented at last year's conference in Lincoln Park. He has also made this available to Chapters along with a script. This presentation outlines our financial history and gives Chapters an idea of the reasons behind some of the Board of Directors' decisions in the past year. If your Chapter has not yet seen this presentation please contact Ed at ed.hansen@aazk.org to get your copy.

Speaking of Directors, it is election time once again. You may have noticed in your December issue a nomination form. If you have someone in mind or are interested yourself please take the time to fill out the nominating form. The past few elections have had the greatest diversity and number of candidates from which to choose. I hope that trend continues in this year's election.

Also with the New Year comes the recharter process. This is a vital process for our association. The process has been changed a little this year. The form has been modified somewhat and you will be receiving it electronically. Please monitor the email address for your Chapter closely. We are sending it electronically to help eliminate hard copy mailing expenses. In addition to your yearly recharter costs we are also adding a duty obligation. There are several choices to be made regarding this obligation so again, peruse the recharter form closely. I hope 2007 proves to be a good year for all. Take care and be safe.



Denise C. Wagner
President, AAZK Inc.

Notice on Discontinuation of 800#

Effective 1 January 2007, AAZK, Inc. is discontinuing its toll-free 800 phone numbers for both the US (1-800-242-4519) and Canada (1-800-468-1966). This action was taken by the Board of Directors as a cost-cutting measure for the Association. While availability of these toll-free numbers over the past ten years has been convenient, it was costing AAZK an estimated $2000.00 per year. It is hoped the membership will appreciate the fact that this decision was made by the Board in order to maintain a fiscally responsible stance during AAZK's current financial situation. Members will still be able to reach Administrative Offices at (785) 273-9149 and staff members via email (Susan Chan: akfeditor@zk.kscoxmail.com; and Barbara Manspeaker: aazkoffice@zk.kscoxmail.com) AAZK also maintains a fax at 785-273-1980.

AAZK Announces New Members

Elise Winterberger, **Elmwood Park Zoo (PA)**; Janis Gerrits, **Smithsonian's National Zoological Park (DC)**; Robyn Johnson, **Maryland Zoo in Baltimore (MD)**; Sherry Tregembo, **Tregembo Animal Park (NC)**; Tracy Williams, **Jacksonville Zoo & Garden (FL)**; Rebecca McElroy, **Santa Fe Community College & Teaching Zoo (FL)**; Nichole Buffa, **Disney's Animnal Kingdom (FL)**; Dawn Constanza, **Busch Gardens/Tampa (FL)**; Loni Pryce, **Nashville Zoo at Grassmere (TN)**; Amanda Thompson, **Jackson Zoological Park (MS)**; Melissa Thueme, **Detroit Zoo (MI)**; Gregory Veeser, **Kewaunee Co. Bruemmer Zoo (WI)**; Melanie Wilson, **Great Plains Zoo & Delbridge Museum (SD)**; Lynsi Schneider and Becky Zahn, **Roosevelt Park Zoo (ND)**; Rebecca Wanner, **Saint Louis Zoo (MO)**; Della Jacot, **Cedar Cove Feline Conservatory (KS)**; Becky Volk, **Ft. Worth Zoo (TX)**; Michael Wallrath, no zoo listed **Richmond, TX**; Angi Killough, **The Texas Zoo (TX)**; Karl E. Kallmeyer, **Willow Park Zoo (UT)**; Linda Cava, **The Phoenix Zoo (AZ)**; Jim O. Hudson, **The Mirage Secret Garden & Dolphin Habitat (NV)**; Joanna Milosevich, no zoo listed, **Yucca Valley, CA**; Jennifer Wesson, **Fresno's Chaffee Zoo (CA)**; Victoria McCloskey, **San Francisco Zoo (CA)**; Kathleen Mroz and Monique Reichel, **Sacramento Zoo (CA)**.

Renewing Contributing Members

Mark Hofling, Bronz Zoo (NYZS)
Bronx, NY

Steve H. Taylor, Director
Cleveland Metroparks Zoo, Cleveland,OH

New Contributing Members

Geoff Hall, General Curator
The Phoenix Zoo, Phoenix, AZ

Renewing Institutional Members

Santa Fe Community College Teaching Zoo
Gainesville, FL
Jack Brown, Director

Palm Beach Zoo
West Palm Beach, FL
Keith Lovett, Director of Living Collections

Michigan State University Library
Lansing, MI

J. Otto Lottes Health Sciences Library
University of Missouri, Columbia, MO

Rainforest & Aquarium at Moody Gardens
Galveston, TX
Mike Riley, President

New Institutional Members

San Diego Zoo, San Diego, CA
Richard Farrar, Director

Como Park Zoo & Conservatory, St. Paul, MN
Michael Hahm, Director

Lee Richardson Zoo Library
Garden City, KS
Kathy Sexon, Director

Reid Park Zoo, Tucson, AZ
Susan Basford, Director

El Paso Zoo, El Paso, TX
L.R. Hutchinson, VMD, MS, Director

Topeka Zoological Park, Topeka, KS
Michael Coker, Director

Henson Robinson Zoo
Springfield, IL
Talon J. Thornton, Director

Coming Events

7th Annual Animal Behavior Management Alliance (ABMA) Conference. Conference at Sea: "Inspiring Conservation through Behavior Management", - 14-21 January 2007. All conference details and registration information, including 2nd call for posters, are available at www.theabma.org.

Third Annual Workshop on Ultrasound and Assisted Reproduction In Elephants and Rhinos - 18-21 January 2007 - African Lion Safari, Cambridge, Ontario, Canada For further details and registration contact: Charlie Gray, African Lion Safari, RR 1, Cambridge, Ontario N1R 5S2 Canada; E-mail: cgray@lionsafari.com

Zoos and Aquariums Committing to Conservation 26-31 January 2007 – Hosted by the Houston Zoo, Houston, TX. ZACC is a bi-annual event that promotes the role of zoos and aquariums in supporting conservation activities worldwide, both at their institutions and in the field. Registration and more information available online at http://www.houstonzoo.org/ZACC, you may contact zacc@houstonzoo.org or phone 713-533-6745.

The 15th Annual IAATE Conference - "Where Inspiration Takes Flight" - 7-10 February 2007 - hosted by Point Defiance Zoo & Aquarium in Tacoma, Washington. International Association of Avian Trainers and Educators.

Association of British Wild Animal Keepers (ABWAK) Symposium 2007 - 3-4 March 2007 at Paignton Zoo Environmental Park. For more information see www.abwak.co.uk

Old World Monkey Workshop 19-22 March 2007- Saint Louis Zoo, Saint Louis, MO. For information contact Colleen McCann, OWM TAG Chair at cmccann@wcs.org or Margaret Whittaker, OWM TAG Behavioral Management and Training Advisor at indu22@earthlink.net

The Mind of the Chimpanzee - 22-27 March 2007 - Hosted by the LincolnPark Zoo's Lester E.Fisher Ceter for the Study and Conservation of Apes. For further info visit www.chimpmindconference.org or email chimpmind@lpzoo.org

30th Annual Herpetology Conference - 31 March - 1 April 2007 - in Gainesville, FL. For more info visit http://www.flmnh.ufl.edu/herpetology/herpconference/afhc.htm

Okapi Keeper Workshop 10-12 April 2007 - Hosted by the Dallas Zoo. The first of its kind, this workshop will feature round table discussions on a variety of okapi husbandry topics from operant conditioning to calf rearing. For more information, call 214-670-6833

Amphiban Biology and Management - 14-19 April 2007 - Toledo,OH - provides a solid background in amphibian biology as it relates to husbandry, breeding, conservation and coperative programs. Topics covered incude general bilogy, classification, diversity, and practical aspects of husbandry, veterinary care, conservatin, and visitor education. For more info visit www.aza.org/prodev/; emai lat AZATraining@aza.org; or call Geri Noland at 301-562-0777 ext 238.

2007 Rhino Keepers Workshop - 7-11 May, 2007 - at Werribee Open Range Zoo, Melbourne Zoo - Australia. For further info contact Brooke Squires; email - rhinoworkshop07@yahoo.com.au; website - www.rhinoworkshop07.com

6th Annual Callitrichid Behavioral Husbandry and Management Workshop - 12-13 May, 2007 - Hosted by the Roger Williams Park Zoo, Providence, RI. This is a free workshop for those working with tamarins and marmosets and will include formal presentations, posters, invited speakers and open discussion covering a variety of topics such as husbandry, training, enrichment and conservation. For more information go to: http://www.rwpzoo.org/calendar/callitrichid.efm or email Jhennessy@rwpzoo.org

Australasian Society of Zookeeping (ASZK) Annual Conference - 18-20 May 2007 - Alice Springs , NT , Australia; E-mail: slromer@bigpond.com Web: www.aszk.org.au

The Chimpanzee Care and Management Workshop 17-19 July 2007. Hosted by the Knoxville Zoo, Knoxville, TN and presented by the Chimpanzee SSP® A comprehensive three-day course covering all aspects of progressive chimpanzee husbandry. Topics include: managing complex social groups, social introductions, operant conditioning training, contraception strategies, and enrichment programs. For registration or other information contact Steve Ross, Lincoln Park Zoo at (312) 742-7263 or ross@lpzoo.org

MIE: Macropod Information Exchange - 27-29 July 2007. To be held in Kansas City, MO. For more information visit: www.macropodinfo.com <http://www.macropodinfo.com> or contact Jacque Blessington at: Jacsprat65@aol.com

International Conference on Environmental Enrichment - 5-10 August 2007. Hosted by Schönbrunn Zoo, Vienna, Austria.

AAZK National Conference - 30 September - 4 October, 2007 - at Moody Gardens in Galveston, TX. Hosted by the Galveston AAZK Chapter. For more info watch the *AKF* or visit the Chapter's website at www.gcaazk.org

BIERZS The Symposium 2007: Bear Information Exchange for Rehabilitators, Zoos and Sanctuaries Location:U.S.A. TBA Dates: Fall 2007 - Information updates will be posted on www.bearkeepers.net

Post Your Coming Events Here

email to: akfeditor@zk.kscoxmail.com

DIVE INTO SOMETHING WILD!!

Dive into something WILD! Join us on the Texas gulf coast and experience an AAZK conference like never before! The 34th Annual AAZK National Conference is proudly hosted by the Galveston Chapter of AAZK and takes place in Galveston, TX from 30 September to 4 October, 2007.

First Call for Workshops and Meetings - if you would like to host a workshop or meeting for the attendees, please email us - conference@gcaazk.org

The Moody Gardens Hotel will be our host hotel, which is on the beautiful Moody Gardens property. Rooms are $135/night. More details are on our website. Take a peek at the lovely Four-star hotel- www.moodygardenshotel.com

Are you ready to travel? Pre-conference trip is aboard the Carnival Conquest! The cruise leaves Galveston 23 September and travels to Jamaica, Cozumel, and Grand Cayman, then returns 30 September, just in time for the Icebreaker! IF YOU ARE INTERESTED IN THIS CRUISE, EMAIL US BY 1 JUNE! We need to coordinate a group rate with Carnival to assure attendees the best rate possible - the more who attend, the cheaper the cost.

Visit our website- www.gcaazk.org

We have a section completely dedicated for the conference! This will be your up-to-date source for conference details. To help with costs, we plan to be as electronic as possible in communicating with you, and you with us; but here's all our contact information:

GCAAZK
3220 Dominique, Galveston, TX 77554
800/583-4679 x4105
www.gcaazk.org
conference@gcaazk.org

Setting Them Up to Succeed: Training the Trainer

By
Deana Walz, AAZK Animal Training Committee Member, Sr. Keeper Utah's Hogle Zoo
and
Dawn Neptune, AAZK Behavioral Enrichment Committee Co-Chair,
Behavioral Programs Coordinator, Utah's Hogle Zoo

Note: This article was presented at the 2006 ABMA Conference and was published in the proceedings. The Animal Training Committee is proud to share it with AAZK in the *Animal Keepers' Forum.* The original citing is as follows: Walz D, Neptune D. (2006). Setting Them up to Succeed: Training the Trainer. *Proceedings of the 7th Annual Animal Behavior Management Alliance Conference,* March 5-10, 2006, San Diego, California: *84-88.*

Introduction

The application of animal training has accelerated at an extraordinary pace over the past few years. We are seeing trends at all levels, with a wide variety of animals by staff with a diverse range of training knowledge, background and experience. Over the past five years, we have developed a formalized Zoo-wide animal training program at Utah's Hogle Zoo. This evolution has been a learning process for keepers and animals alike.

Although training has historically been a component in a few animal areas (i.e. elephants), the expectation was to develop a program that provided our entire animal care staff, from reptile to primate keeper, a greater sense of training confidence. Our hope was to utilize a protocol that gave staff a solid, self-sustaining foundation to build upon. We recognized the need to impart new trainers with not only the technical information, but the practical and problem solving skills that are essential to a proactive and successful program as well.

To accomplish this task, we developed the 'New Trainer 10-Step' program. The goal of this instructional roadmap was to provide new trainers with a greater sense of preparedness and a supportive foundation.

Policies and Procedures

A formalized training program should start with some basic guidelines, outlining institutional policy and expectations. At UHZ, our training program addresses:

- Course requirements
- Documentation
- Communication

In addition to a specified protocol, there are a few more procedures that provide supplemental support to training staff:

- Safe training policies
- Workshop and meeting attendance
- Knowledge of animal
- Evaluation methods

Course Requirements

Orientation - Step 1

Every new keeper is required to attend a day-long New Staff Orientation. This introduces staff to a wide variety of zoo policies, including a behavioral program overview. Attendees are provided a brief review of training basics, the training protocol, resources, expectations and an introduction to the 10-step process.

Training 101 – Step 2

It is in our Training 101 course that we expand and explore the finer details of training and operant conditioning. This instructional course is offered as a three-part series.

In Part 1, we discuss the applications and benefits of positive reinforcement-based training, including but not limited to: management, enhanced husbandry and health care, staff and institutional benefits. But the primary focus of Part 1 is training terminology. We feel it is essential that prior to hands-on training, we must all begin by speaking the same language.

In Part 2, we again review UHZ's training protocol highlighting our methods of documentation. We also provide trainers with a variety of beneficial resources, including recommended readings, professional organizations, websites and list serves. The "meat" portion of this Training 101 sandwich concentrates on the "how to" basics of animal training. The development of a shaping plan, record keeping, consistency and teamwork are emphasized. Additional course materials include the beneficial "10 Laws of Shaping" and motivational training tips to getting started and maintaining momentum.

Part 3 focuses on problem solving and some interactive exercises, including writing mock shaping plans and the famous training game.

Behavioral Management Workshops – Step 3

As a part of our continuing education for all trainers, we offer Behavioral Management Workshops. These hands-on, practical learning opportunities help trainers fine tune their technique, expand on their developing skills and provide fun ways to refresh on terminology. We have offered a wide variety of workshops.

- Training Jeopardy and Training Bingo
  Focuses primarily on terminology, promotes teamwork and can even sharpen bridge timing.
- Logging Training Sessions
  Trainers watch a videotaped training session and are supplied with the shaping plan of the behavior they are observing in the session. Once the session is over, we ask staff to log the session as if they were the trainer. This opportunity encourages observational objectivity and stresses the importance of consistent criteria and detailed log entries.
- P.B. & J. and Sundae Building
  Participants are asked to write up shaping plans, describing how to make a sandwich or sundae. Plans are exchanged and implemented. The resulting, entertaining errors emphasize the need for small approximations and clear, descriptive steps.

Qualifying Exam – Step 4

Once keepers have completed the Training 101 courses, they are required to take a qualifying exam prior to proceeding to the next step. The purpose for the exam is to get an idea of how well they grasp the basic training concepts or if there are any portions that might need more attention or explanation. The exam consists of terminology, training concepts and methods of implementation.

Staff Support

Peer Mentor Program – Step 5

Having completed the exam with an overall score of 80% or better, new trainers are paired up with a training mentor. The mentors are selected based on the following criteria:

1. Have been training at UHZ for one year or more
2. Have trained at least three behaviors through to establishment
3. Scored a 90% or better on the qualifying exam
4. Has supervisor's approval

Mentors and new trainers are paired according to animal experience and interest, personality, and communication styles as well as logistical convenience (scheduling, zoo area, etc.). This portion of the 10-step, modeled after Disney's Animal Kingdom's 'New Trainer Integration Plan', is the most essential portion of trainer preparation. This comprehensive program requires training video observation, review of Zoo training documents, session observation, safety, situational problem solving, trust building, working established behaviors and completing log entries.

New trainers are given regular support and interaction throughout this process with both their mentor and their assigned Behavioral Enrichment Coordinator. Depending on how motivated the new trainer is, the process should take 3-6 months to complete. Once the Peer Mentor Program is complete, the new trainer is signed off and approved for individual training...but we're only getting started!

Documentation & Accountability

Submit Paperwork – Step 6

The Behavioral Management Proposal form outlines designated species/individual animal program, specified training goals, time resources available, reinforcers and tools needed as well as any expected challenges. This document is a formalized approval process that also aids in on-going program tracking.

The 'New Behavior Worksheet' documents the individual behavior; contact trainer, behavioral goal, bridge, reinforcement, cues criteria, and most importantly, the shaping plan. To aid in the learning process as well as insure institutional consistency, trainers are given the following guidelines:

1. Complete the plan in pencil or as a word processor document
   We ask that shaping plans be prepared in this way so they can easily be changed if needed during the process.
2. Bullet point shaping steps
   We implemented a behavior tracking system by assigning percentages to each step of the shaping process. This keeps the trainer more consistent in the tracking of the progress of a new behavior and provides motivational milestones of progress.
3. Clearly define outline with good description at every step
4. Specify criteria
   This is also an invaluable tool in maintaining behavior quality once the behavior is established and will be worked by multiple trainers.

Follow-up and Review – Step 7

This step is the primary responsibility of the Behavioral Enrichment Coordinators. It is a compilation of various tracking methods that can serve as potential red flags, enabling proactive problem solving. It targets:

- Shaping plan review and maintenance
- Log entry completion
- Videotaped sessions
- 1:1 consultation

This is also a required deadline when peer mentors must check in for a final follow-up with the new trainer (three weeks after sign off). The hope is to convey an on-going support system and keep the lines of communication consistently open.

Our Animal Care Supervisors also assist in the review process by checking in with their team trainers, observing sessions and providing beneficial feedback. As some of our supervisors do not have an elaborate background in training, we have developed a helpful "Session Review Reference Sheet" for their use. This concise document targets a top 20 of common training errors and methods of improving technique.

Progress Report – Step 8

The progress report is utilized by the Behavioral Enrichment Coordinators to track progress and or problems in each individual training program. It also allows us the opportunity to make sure that the required paperwork has been completed to the standard that is expected from our trainers. The report tracks the amount of sessions completed during a specific time frame, an average session rating, and how far along the trainer is in the shaping process. (This is where the shaping plan percentage breakdown comes into play.) This report is given to the trainer's Animal Care Supervisor as well for additional insight on how the program or trainer is progressing. We strive to complete these reports quarterly for every trainer.

Behavioral Enrichment Checklist – Step 9

Every year, the Behavioral Enrichment Coordinators are asked to complete a Behavioral Enrichment Checklist at the time of the keepers' annual performance evaluation. The checklist reviews both enrichment and training. In the training section, we document if the keeper has completed the New Trainer 10-step, if the keeper is utilizing operant conditioning techniques appropriately and effectively, that all required paperwork set forth by the Zoo's protocol are complete and if they have attended any Behavioral Management Workshops during the year. The checklist is given to the Animal Care Supervisor and is utilized to assist in evaluation of their performance with regard to enrichment and training.

Continuing Education

Advanced Training Courses – Step 10

The advanced training courses are designed for our training mentors with the intent to offer progressive learning opportunities. These trainers have been training for well over a year and have played the training game numerous times. We had to develop more complex training game scenarios as well as give them the opportunity to further develop and fine tune their training and mentoring skills. The courses we have offered are:

- Training Game: shaping chains of behaviors
- Training Game: training using capture, mimicry, baiting or successive approximation
- Communication skills: how to give/receive constructive critique and maintain professionalism
- Communication skills: styles, personalities and how to be a good listener

Future Goals

In developing this self-sustaining program, we came to the realization that the best way to learn how to train is simply by doing it. Therefore, we would like to develop more hands-on, practical training opportunities for new trainers prior to initiating their own programs. We are considering assigning new trainers to one of our free ranging chickens, turkeys or peafowl or perhaps an education rat to offer more applied training experience. This would enable work on delivery, timing and real time problem solving.

To continue this initial success of our training program, we want to offer each trainer more one on one consultation time with their assigned B.E. Coordinator. We also hope to involve the Animal

Care Supervisors and Staff Veterinarians more in observing sessions, providing guidance, feedback and of course, reinforcement!

Conclusion

In conclusion, our goal of developing an institutional training program that provides new trainers with a greater sense of confidence and support has been realized through the use of this 10-step tool. It has provided trainers with an instructional roadmap, supportive foundation and some defined expectations. It also offers supervisory staff the means of facilitating trainer development as well as measuring trainer status and progress. As with all training, it is a fluid and ever-evolving process. We look forward to the continued progression of its growth and refinement.

Resources

Baker, A. (1991). Training as a management tool: Creating the climate and maintaining the momentum. Proceedings of the 1991 AAZPA National Conference, San Diego, CA.

Millwood A. and MacPhee M. (2000). Organization Techniques To Foster Consistency in Animal Training Programs. AAZK Conference Proceedings: 85-94.

Pryor, K. (1985). Don't Shoot The Dog: The New Art of Teaching and Training. New York, Simon and Schuster.

Sevenich, M. (1995). Guidelines for animal training programs. 1995 AZA Regional Conference Proceedings, pp. 142-147.

Stark, B. and Wiechec, M. (1998). The Implementation of a Zoowide Training and Enrichment Program. AAZK, EMA and AZH Joint Conference Addendum: 30-42.

The Animal Training Committee Presents

ATC

Animal Training Committee AAZK, Inc.

Training Tales...

Where you can share your training experiences!

Just a reminder, submit your "Training Tales" and experiences in operant conditioning to share with *Animal Keepers' Forum* readers. This opportunity provides a convenient outlet for you to exhibit your training challenges, methods and milestones with the AAZK member network. See a more detailed description of the Training Tales concept in the August 2006 *AKF* on page 331. Please submit entries based on the following guidelines:

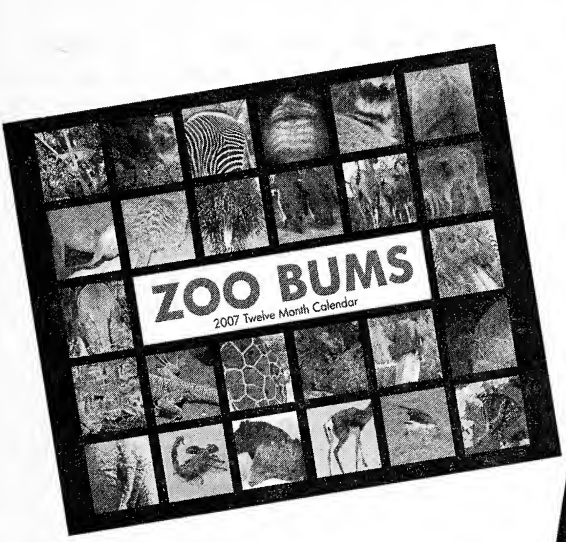
a) *Submit a brief description of a training project at your zoo (500 words or less, in text or bullet points). Details should include the following:*
   - *Define the training goal*
   - *List important steps*
   - *Timeline used*
   - *Tips you learned along the way*

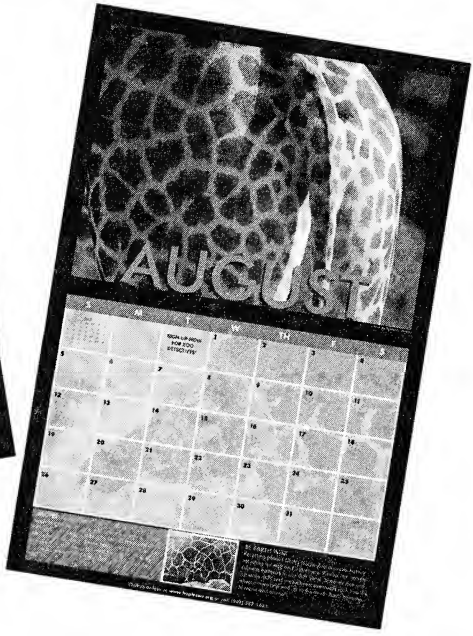
b) *Include 1-2 digital photos (jpg or tif) that clearly depict the animal in the learning process or performing the desired goal (list source and photographer of each image).*

Please send entries or questions to: Jay Pratte at jpratte@zooatlanta.org (use Training Tales Entry as the subject line). Happy training!

"ZOO BUMS" 2007 Calendar

To benefit the Utah Chapter of AAZK





This unique calendar shows off the better side of many of our beautiful Hogle Zoo wildlife - reminding us daily that there's no looking back! Get yours NOW for the "bum" or animal lover in your life and get the New Year off to a great start!

$15.95 each ***(which includes shipping)***

To purchase call (801) 584-1784 or email us at utahaazk@hoglezoo.org

LIMITED QUANTITIES
ORDER YOURS NOW WHILE SUPPLIES LAST!!

* With special acknowledgement to the Cheyenne Mountain Chapter of AAZK - thanks for such a great idea!

AAZK Grant Report

The Centre for Animal Rehabilitation and Education C.A.R.E.

By
Jodi Neely Wiley, Senior Keeper
North Carolina Zoological Park, Asheboro, NC

As Senior Keeper for a large troop of hamadryas baboons (*Papio hamadryas*) at the North Carolina Zoo, I am always looking for new enrichment ideas and husbandry methods. In February 2006, with funds received from the American Association of Zoo Keepers/Geraldine Meyer Professional Travel Grant and the North Carolina Zoological Society's Randolph Friends of the Zoo Employee Grant Program, I traveled to the baboon sanctuary - Centre for Animal Rehabilitation and Education (C.A.R.E.). During my month at C.A.R.E., I was able to learn hand-rearing techniques for infant baboons, new enrichment ideas and to gain experience working with another species of baboon.

Introduction

Rita Miljo founded C.A.R.E. in 1989 for injured indigenous South African wildlife. C.A.R.E. is located in Phalaborwa, South Africa on the banks of the Olifants River. Increasing numbers of orphaned, injured and abused chacma baboons (*Papio cynocephalus ursinus*) were given to C.A.R.E. so they became the primary focus for the centre since no other wildlife rehabilitation facility existed for baboons in South Africa. C.A.R.E. specializes in rehabilitating and releasing chacma baboons back into the wild.

The "Vermin Law" was set up under apartheid government which ordered the extinction of five species: chacma baboon, vervet monkey (*Cercopithecus aethiops*), caracal (*Felis caracal*), jackal (*Canis spp.)* and the bush pig (*Potamochoerus porcus*). When C.A.R.E. was developed in the late 1980's, they were prevented by law from taking in any primates that fell under the "vermin law." As baboons were deemed pests, any group of seven or more individuals could form a "hunting club." By law, such a "hunting club" would be allowed to enter C.A.R.E.'s sanctuary and shoot any baboons that were being cared for at the centre. In such instances C.A.R.E. would be legally obligated to pay for the bullet expelled. This did not stop Rita Miljo from beginning the sanctuary. Rita was born and raised in Hitler's Germany and emigrated to apartheid South Africa. Some may say that Rita is the Dian Fossey of baboons.

C.A.R.E. established four basic goals:

1. Saving and Rehabilitating South African wildlife affected by man and human activities
2. Reintroduction of rehabilitated animals back into the wild
3. Ongoing educational programs, particularly the species housed at C.A.R.E.
4. Raising the necessary finances to accomplish these goals

Hope came for the baboons when in 1995 South Africa ratified the Convention on Biological Diversity. However, even after 12 years of democracy there has been little success getting the "vermin law" eliminated. To date, only three of the nine South African providences have done away with the "vermin law."

Increasing agricultural demands have resulted in reduced areas of habitat for baboons. Farmers, by law, are permitted to remove (by any method) baboons trespassing on their land. Other hazards including: poisoning, poaching, illegal pet trade have all contributed to the increasing numbers of injured or abandoned baboons in need of rehabilitation.

Hand-Rearing Infants

C.A.R.E. developed a hand-rearing protocol for orphaned infant baboons coming to the sanctuary. They found that using a human surrogate mother was the best option for chacma baboons at the sanctuary because the orphaned baboons required extensive physical contact. It is difficult to separate adult female baboons from a troop to be a surrogate and re-introduce them successfully at a later date. C.A.R.E. rears the infant baboons and incorporates the youngsters into existing troops with the hopes of eventually releasing the self-sustaining troop back into the wild.

Infants coming to the sanctuary between the ages of one day old to five months old are given a human surrogate mother. If a baboon comes to the sanctuary five months or older, the need for a surrogate mother is dependent on the individual baboon, their confidence and independence level. The baboon may be incorporated into a juvenile troop if their personality best fits this option.

The first few days after birth are a critical time for the mother and infant baboon to form a bond. It is speculated that a baboon bonds to sight, smell, and sound of their mother. Once the young baboon is paired with a surrogate mother, they stay together all of the time. Once the bonding is established, the infant will not go with anyone but its mother. Unlike human mothers, baboon mothers rarely if ever put their offspring down or hand the infant to an "auntie." The same model must be followed for a surrogate human mother and infant baboon. The general rule at C.A.R.E. is that a child can walk away from its mother, but the mother can never walk away from the child.

In the early stages of bonding, surrogate mothers often encounter problems when they alter their smell or appearance. This often occurs when the surrogate mother changes clothes or bathes. This can sometimes be avoided by washing with unscented products. The same blankets and towels can be used to keep some of the familiar scents so the changing of clothes can be less detrimental.

The infant baboons at C.A.R.E. begin drinking milk as soon as possible to prevent dehydration and to get the necessary vitamins and nutrients. The baboons are given human infant formula via a sterilized teat and bottle.

Author babysitting the juvenile baboon troop. Alice and Gigi are sitting on her lap for comfort and are learning grooming techniques

As the infant becomes more mature, the infant's circle of acquaintances is extended to those humans closest to the mother and any infants they may be surrogating. The next step is to gradually introduce the infant to their troop. There are two options at C.A.R.E to incorporate young baboons into a troop: a troop of peers or a troop consisting of mixed age baboons.

The first option is initiated at the infancy stage, whereas the second option usually occurs once the infant is weaned. C.A.R.E. has found introducing infants into a nursery troop with peers is the easiest transition. Nursery troops are formed depending on personalities and how they interact with one another. The human mother will gradually introduce the infant into their troop each day and accompany them into the enclosure for support and comfort. This is a gradual process, but relies on the individual personalities of the baboons and eventually the mother will leave the baby once confidence is achieved. A familiar person that the baboons are comfortable with is present at all times (up to eight months old) in case any of the baboons need support. C.A.R.E. tries to wean all of the baboons by 12 months. The weaning process normally begins around six months of age.

The second option is to introduce the young baboon into a mixed age troop. This is considered only after the young baboon is capable of finding their own food since it can be dangerous for the human surrogate to spend an extended amount of time with the troop. It is necessary to ensure one of the older baboons in the troop will look after the young baboon. This is achieved by having the surrogate mother and baby sit outside of a troop's enclosure. If one of the females from the troop shows a great deal of interest in the baby, it will be decided to introduce the baby to the troop.

Olivia, a chacma baboon living at C.A.R.E., intently grooms the author.

Enrichment

Throughout the baboon's lives at C.A.R.E. they are provided with many types of enrichment items to approximate life in the wild which prepares them for their eventual release.

All of the enclosures are set under natural bush vegetation and have natural earth flooring to encourage foraging behaviors. A small dam of water for swimming and soaking their food is provided. The enclosures have complex structures made of wood and hanging fire hose to encourage climbing and to help develop motor skills. The baboons are also provided elevated platforms for sleeping and shelter from the weather.

The baboons are given trees that have fallen from passing elephants on the Centre's grounds. The baboons eat the leaves and the bark as they would in the wild. This type of browse item provides the opportunity to manipulate and eat natural food items.

Keepers hide insects under rocks in the enclosures and teach the baboons how to move the rocks and eat the insects.

Wild baboons spend the majority of their time foraging. A varied diet is given to their captive counterparts. Seasonal food from the bush is provided including: marulas and wild figs, as well as dry mieles - which are an excellent foraging item since every corn needs to be picked up and cleaned before eating.

Release

The presence of wild baboons on the Centre's grounds is speculated to be instrumental in the great success rate of rehabilitated baboons being released back into the wild. The wild baboons regularly interact with the captive rehabilitated baboons. In some instances the captive baboons have been accepted into the wild troops. C.A.R.E. seems to be an ideal setting where rehabilitated baboons can regularly interact with wild baboons to prepare them for their eventual release.

Release sites must be suitable, safe and secure in protected wilderness areas. C.A.R.E. must apply for permits and gain approval from the surrounding landowners of the prospective release site. Keepers will stay with the baboons at the release site for several months and teach them how to survive on their own. Keepers will walk the troop to the nearest water hole and show them were they can find food. Once the baboons begin to wonder off on their own and no longer need human help, the keepers will leave the site and periodically come back to the site to observe how they are doing. When a troop is released conditions must be correct. Releases take place only after a very good rainy season to ensure there will be enough water and resources for the troop to survive on their own.

C.A.R.E. has successfully released nine troops of baboons back into the wild. The first release took place in 1994. Ten hand-reared baboons were released as a troop and were integrated into the existing wild population of baboons at the release site. After one year, a 70% survival rate was observed. The second release of a troop of 18 was at Mosdene Nature Preserve, in an area where wild populations of baboons were extinct in 1996. This past year a census was taken at the release site and 45 baboons were counted. In June of 2006, the ninth release was at the same site with the hopes of the same success rate. In the summer of 2002, a troop of baboons that were saved from the French military for radiation testing were released. Nelson Mandela came to watch the re-release of these wild-caught baboons "walk to freedom." In late 2002, 35 rehabilitated baboons were released at a world heritage site, Vredefont Dome. Unfortunately, one of the two troops released was poisoned and two of the baboons were shot. Six baboons total were lost. The remaining baboons had to be taken back to C.A.R.E. to live in captivity until another safe release site was approved.

A wild baboon grooms a captive baboon at C.A.R.E. The baboons at C.A.R.E. regularly interact with wild baboons. This helps prepare the rehabilitated baboons for their eventual release back into the wild.

C.A.R.E. will take in any wounded or abandoned animal. Rita Miljo has rescued hippos (*Hippopotamus amphibius*), meerkats *(Suricata suricatta)* and together with IFAW started the first true lion (*Panthera leo*) haven in South Africa. C.A.R.E. has begun one of the only successful breeding programs for the endangered Samango monkey (*Cercopithecus mitis labiatus*).

Rita Miljo and all of the staff at C.A.R.E. are absolutely amazing people who have dedicated their lives to the preservation of baboons. C.A.R.E. receives no government subsidy and is largely ignored by South African officials for their work with the chacma baboon. C.A.R.E. is reliant on donations. There is a constant need for donations to help pay for the releases, bottles, formula and diets. C.A.R.E. would also like to begin to give the non-releasable females birth control implants to help control the captive population births. Elephants have recently been stampeding through the sanctuary destroying baboon enclosures, so C.A.R.E. is looking for donations to buy a perimeter fence to keep wild elephants off of the sanctuary's grounds. Any donations you can make will make a difference. Donations can be sent to: C.A.R.E., Acc no 6202 5834 187, Bank: First National Bank. Address: Randburg, South Africa; Telephone number: +27 11 449 6056; Bank code:251-655 Swift No. FIRN ZA JJ.

Mr. Niggles (an infant chacma baboon) holding the author's hand.

Acknowledgements

Special Thanks to: Rita Miljo and the dedicated staff at C.A.R.E., AAZK, North Carolina Zoo Society, North Carolina Zoological Park, the keepers, supervisor and curator of the NC Zoo's African Pavilion, and Michael Wiley

References:

Altmann, Jeanne. 1980. Baboon Mothers and Infants. The University of Chicago Press, Chicago, IL

Kummer, Hans. 1995. In Quest of the Sacred Baboon. Princeton University Press, New Jersey.

Miljo, Rita. Personal interview.

Strum, Shirley. 1987. Almost Human. Random House, New York.

Bowling For Rhinos
Recipe for Success

BFR Event Facility Planning

- **Set a Date** - Early so that it can be advertised in as many newsletters, fliers as possible. Info should be placed in **zoo newsletters** (at least 4 times), **facility volunteer newsletters, Society communications, facility maps or advertisement fliers.**

- **Chamber of Commerce** – Check with Chamber (or other Community Association) prior to setting date to find out events that could conflict. Once you choose the date, inform your Chamber of Commerce and ask to be placed on their Calendar of Events.

- **Facility Management** – Set up a meeting with your facility director and/or management. If a facility needs some coaxing, reference a "Memorandum of Agreement" between AAZK/ BFR & AZA signed at the 1996 Honolulu conference: AZA will assist AAZK's BFR event through their resources such as Public Relations (PR) Graphics Departments. You may remind them, the better your event does, the better it looks for the zoo in the eyes of the public. A successful BFR event gives your facility "bragging rights".

- **Volunteer Coordinator** – Set up a meeting with the Coordinator. Talk to your zoo volunteers at an organized luncheon to let them know they can join the event or sponsor someone (have your forms ready) or work at the event.

- **Society Director** – Set up a meeting with the Director or Coordinator of the entity that supports your facility. Promoting the BFR event, promotes the facilities involved.

BFR Event Pre-Planning

- **Collect door prizes**. Seek the big airline prizes 4-6 months in advance (write thank you notes – helps build a base for next year!) Hint: Restaurants are easy to get prizes from. **Visit a potential donor in person, with formal letter of donation request.** The letter should detail the successful history of the event on the local and national levels.

- **Fliers** - Put registration fliers in an area where volunteers may see them-in their "check –in" area. Have fliers that you can hand out so they can be completed later.

- **Invite Bowlers from Previous Events** (addresses listed on sponsor forms from prior year)

- **Blue Rhino Gas** - These folks are the primary event sponsor and should be included in all local events. (They may even underwrite your event!)

- **Rhino Linings** – After asking Blue Rhino, try to get a commitment from these folks in your area to join your event, If Blue Rhino cannot commit Rhino Linings may be an event sponsor.

- **BFR is Open to the public** – Make sure this fact is well advertised.

- **Create a T-shirt** – Look for sponsors for the event shirt

- **A Day off Work**? - See if your zoo will offer a day off work for the team who raises the most $ (ex. Graphics team, Maint. Team, etc)

- **Special Events** – Your facility may have a department that can lend a hand – hey, these people do this for a living! Seek help to get the word out.

- **Prizes** - It pays to advertise. Once you have a list of Door prizes or other giveaways, raffle prizes, etc. Publicize the list to attract bowlers and sell raffle tickets.

- **Invite Celebrities** to bowl at your event (especially TV/radio- free advertising!).

- **Advertising - p**ost info next to **rhino/elephant exhibits** about your upcoming event and how to join!

- **Trip Winner** – The person that raises the most money, wins a trip. Don't be shy, let your potential donors know this fact.

- **Friends and Family** – The most important donors of all, an usually, the softest touches!

- See http://aazkbfr.org

If your Chapter would like a "Lewa Promo" DVD free of charge, please contact Helen at lewausa@erols.com.

For additional BFR Event information or assistance - **Contact Patty Pearthree, AAZK BFR Coordinator at:** ppear3@pear3.org **or 919-678-0449.**

Survey of American Ichthyological and Herpetological Collections

The American Society of Ichthyologists and Herpetologists (ASIH) Collections Committee is conducting an on-line survey of American ichthyological and herpetological collections. This online survey will provide valuable data that will enhance long-term support and maintenance of collections. Based on previous surveys by Poss & Collette (1995) and Collette & Lachner (1976) of ichthyological collections, this survey captures general collection information, as well as more specific information on collection and data management policies (e.g., availability of electronic catalogs). This survey addresses a need for detailed information about ichthyological and herpetological collections, while other ongoing initiatives, such as the Legacy Infrastructure Network for Natural Environments (LINNE), seek to more broadly identify existing collections for inclusion into an accessible network for the scientific community. Results from the survey will be summarized and submitted for publication in Copeia and will be also be available from the main ASIH website, including an improved index to collections.

Please take a moment to complete the survey at: http://chelydra.unm.edu/asihsurvey

If you have any questions, please contact any of the following:

J. Tom Giermakowski
Museum of Southwestern Biology
tomas@unm.edu

Nelson Rios
Tulane University Museum of Natural History
nelson@museum.tulane.edu

Christina A. Wolfe, Collection Manager, Herpetology at Sam Noble Oklahoma Museum of Natural History, University of Oklahoma, 2401 Chautauqua Ave., Norman, OK 73026; (405) 325-7771; (405) 325-7699 (fax); cwolfe@ou.edu

ELECTION.....2007

Yes! It is once again time to elect Board of Directors for the Association. There are three positions up for election. Those positions are held by Jacque lessington, Shane Good and Norah Farhnam. New Board members will serve a four-year term from the close of the 2007 National Conference until the conclusion of the 2011 National Conference. If you or any one you know would like to be nominated for these positions please send your completed forms to: Election 2007, c/o AAZK, Inc., 3601 SW 29th St., Ste. 133, Topeka, KS 66614-2054. All nominations need to be received **no later than February 28, 2007**. If you have ever wanted to make a difference in AAZK, now is the time to step up to the plate and give us your best.

Duties of the Board of Directors

1) Select, appoint or remove officers, committees, agents and employees of the Association, including - prescribing powers and duties.

2) To control and manage the Association and its property, passing upon acquisition and disbursements with approval of a majority of the Board.

3) To formulate policies, rules and regulations in accord with the Constitution & By-Laws.

4) To uphold the Constitution of AAZK and the policies of the Association.

5) To appear at Board meetings, to accept Board assignments and to devote the time to communications pertinent to all Board business, including answering correspondence promptly and efficiently.

Qualifications for Nomination

1) Nominee must be a Professional Member of AAZK, Inc. in good standing and must have been a member of the Association for at least one (1) year.

2) Nominee must be presently employed as an animal keeper/attendant, veterinary technician, research technician or other personnel directly connected with the care, feeding and educational display of captive wildlife in a recognized zoological park, aquarium, animal reserve or other animal care facility in the U. S. or Canada and must have been in the zoological field for at least two (2) years.

Nomination Procedure - Forms MUST be Typed

1) Nominator Form:

a) List the name of the nominee, phone, address, and institution.

b) State in 150 words or less the reason(s) why the nominee warrants election to the Board of Directors.

c) Nominator signs forms and mails to NEC Chairperson.

d) Notifies nominee that they nominated him/her for the Board of Directors.

2) Nominee Biographical Form:

a) Professional background: places of employment, length of service, titles.

b) Membership in AAZK: National and local Chapters, number of years, offices held, involvement in activities.

c) Educational background.

d) Membership in Affiliate Organizations: (AZA, CAZPA, Audubon, etc.)

e) State in 500 words or less why you would like to be on the BOD and any other pertinent information. (optional)

f) References (one or two)

g) Nominee signs forms and mails to AAZK Administrative Office.

NOTE: Candidate is ineligible for nomination if **both** the nominator and nominee biographical **forms** are not **complete** and **returned** **by 28 February 2007** . Send to: Election 2007 c/o AAZK, Inc., 3601 SW 29th St., Ste. 133, Topeka, KS 66614-2054.

Nomination Form for

AAZK Board of Directors

(Forms MUST be Typed)

Qualifications for Nomination:

1) Nominee must be a Professional Member of AAZK in good standing and must have been a member of the Association for at least one (1) year.

2) Nominee must be presently employed as an animal keeper/attendant by a recognized zoological institution or aquarium in the U.S. or Canada and must have been in the zoological field for at least two (2) years.

1. Name of Nominee:

Address:

Phone:

E-mail:

Institution:

Director:

2. State in 150 words or less the reason(s) why the nominee warrants election to the AAZK Board of Directors. Use extra paper if needed.

3. Signature of Nominator: _____

4. Name of Nominator _____
(please PRINT)

5. Form must be received by February 28 , 2007. Send to: Election 2007 c/o AAZK, Inc., 3601 SW 29th St., Ste. 133, Topeka, KS 66614-2054.

Nominee Biographical Form
for AAZK Board of Directors

(Form MUST be Typed)

1. Name:

Address:

Phone:

E-mail:

PLEASE LIST THE FOLLOWING INFORMATION

2. Professional Background: (places of employment, length of service, titles)

3. Membership in AAZK:

a) National: number of years

Activities:

b) Local Chapter(s): number of years, offices held, involvement in activities.

4. Educational Background:

5. Membership in Affiliate Organizations (AZA, Audubon, WWF, CAZPA, etc.)

6. State in 500 words or less why you would like to be on the BOD and any other pertinent information (optional/use additional paper if necessary)

7. References (one or two); give name, address and phone number where they can be reached:

8. Nominee's Signature:_____

9. Form must be received by February 28, 2007. Send to: Election 2007 c/o AAZK, Inc., 3601 SW 29th St., Ste. 133, Topeka, KS 66614-2054.

REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

By William K. Baker, Jr., Curator
Panthera Research, Maumelle, AR

Question
We are looking at items for next year's budget, are there service vehicles that can also do "double-duty" in crisis situations?

Comments
Over the years I have seen service vehicles come and go, some were good, others were great, and some were just terrible. Having started out years ago as a working keeper, I thought that any service vehicle would be an improvement over a wheelbarrow. Unfortunately, considering some of the service vehicles that I have been saddled with in years past, my line of thought changed over time. There were definitely days when I would have rather had a wheelbarrow over a cart and was ecstatic when the cart went to the shop, which was usually every month. Considering that many zoological facilities did and still do send their vehicles out of house to fleet services, I was comfortable in the knowledge that I wouldn't have to see my cart for several weeks.

Now, the question might arises "What has this got to do with crisis management?" It is my belief that if you can't rely on your service vehicles on a day-to-day basis, then I can't imagine them being reliable in a crisis situation. I have a marked preference for using only what works, even if that means that I have to deviate from using a brand or manufacturer. What I mean to say is that I have a tendency when I find a brand name that produces a series of products that I like to use them for other purposes. However, as time has gone by I will throw a product away and start over rather than being tied down to something that just flat won't work, even if that means I must move off a product line that I like to use.

Having said all of this, it's far easier for me to tell you what I recommend rather than what I won't. The John Deere Gator TH 6 x 4™ is hands down my favorite vehicle. It's low center of gravity coupled with six wheels on the ground, and all-wheel traction makes it a go anywhere vehicle. It also has great ergonomics and handles like a car rather than a truck. It is available with a deluge of features and I recommend the gauge kit, bumpers, brush guards, light kits, organizer, winch, and bed liner to start with. I also recommend the all terrain tire kit and gun boot for this model. An additional feature that I have seen for the past few years is the stretcher kit that can be added to the bed for an incapacitated person and additional space for a caregiver allowing first responder treatment en route.

Another vehicle that I have seen in recent years that performs well in all environments and conditions is the Polaris Ranger 4 x 4 EFI and 6 x 6 EFI models™. Each of these has the capability of going over some of the most rugged terrain and mountainous country. The center of gravity is higher than the

John Deere Gator, but this also is compensated for by a reinforced suspension that gives it a climbing ability similar to a mountain goat. Rugged and durable, I have seen these hold up over extremely rocky terrain. I recommend the WARN winch attachment, brush guards, nerf bars, box rack, and gun scabbard. I should also mention that both the John Deere and Polaris products come with blade attachments for clearing roads and walks from snowfall and sand dunes depending on what part of the country you live in.

Either of these companies produces reliable vehicles. But, you can always get by in most situations with a pick-up truck from either Ford or General Motors. Truth is, you can cover more territory with more power, and go from off-road to highway depending on your needs. The avalanche of accessories for pick-up trucks is literally overwhelming...if you can imagine it, they probably make it.

As a side note, you may also want to check out the column I did in 2005 on emergency vehicle supplies (Reactions: January *AKF* pgs 25-26) for additional equipment to stow in your cargo box.

Question
Every year new model locks come out. Can you tell me what you would recommend for our facility?

Comments
I would recommend the following product lines for zoological operations and security measures:

Master Pro Series™ padlock – 6850 products
2" (51 mm) wide body, hardened boron steel alloy shackle for cut resistance, removable cylinder can be replaced or repinned, 5-spool pin tumbler for added pick resistance, solid brass bodies and cylinders, and stainless dual ball bearing locking mechanism for protection against prying and hammering.

Master Home and Yard padlock – 150 KAD product
2" (50 mm) wide body, 5-pin tumbler security, hardened steel shackle, solid brass lock body. While not as nice as the 6850 products, these locks can provide good reliable service when maintained properly.

LSDA Pin Tumbler padlocks – BP 500 products
2" (50 mm) wide body, solid brass corrosion resistant body, pin tumbler cylinder with solid brass keyway, chrome plated hardened steel shackle, double locking shackle mechanism, and a choice of different keying options. Supplied with (2) nickel-plated brass keys for smooth operation.

Question
I just finished reading your paper "Career Advancement in the Zoological Industry" and wanted to ask for a little more information about putting your best foot forward when you're looking at a situation where you are already working at a zoo, but want to advance? Not really crisis management, but I would appreciate any advice you may have.

Comments
The best way I can answer this is to stress just how important it is to maintain a good standing at your present institution. Avoid the politics, the confrontations, and the cliqués. If you conduct yourself

as a professional, then you're perceived as a professional. Always do the best you can at whatever you do, don't wait to be asked to do something, and volunteer when times are tight. Your single best assets are your character, integrity, and common sense. They are defining factors. As I've said before, most of us have college degrees, what will set you apart is how your co-workers and the profession as a whole perceive you. Actually...come to think of it, the same can be said for crisis responders.

Question

In many of your columns you have mentioned tool sets. What brands do you recommend?

Comments

I recommend a lifetime guarantee brand such as Craftsman®, Kobalt®, Snap-On®, or any of the other brands that are popular with mechanics. Just be aware that these brands due tend to be costly when you're talking about mechanic master tool sets. You will want to budget them on an annual fiscal basis.

Next Month: Are there safety items for cold weather environments?

If you would like to submit a question for this column or have comments on previously published materials, please send them to AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614 Attn: Reactions/AKF

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor, NRA Firearms Instructor, and Red Cross CPR/First Aid Instructor. Away from work he operates Panthera Research, which is a research and consulting firm).

Re-creating Nature:
The making of an artificial meerkat burrow

By Rebecca Richendollar, Meerkat Keeper
North Carolina Zoo, Asheboro, NC

Introduction
Zoos strive to create exhibits that provide for all of their animals' needs. Innovative exhibit design can be used as a means of encouraging species appropriate activity, reducing stress and stereotypic behaviors, and creating an environment that is stimulating and interesting (Coe, 1997). At the North Carolina Zoo, we are constantly updating and modifying our exhibits to meet with the needs of our collection. When the resources needed to create permanent modifications are not available, creative keeper solutions come into play.

Meerkats (*Suricata suricatta*) are members of the mongoose family native to southern Africa. They live in cooperative groups of up to 30 individuals. Meerkats use burrows for sleeping, for hiding from both predators and the hot midday sun, and for birthing dens (Russell, Brotherton, McIlrath, Sharpe, and Clutton-Brock, 2003). The burrows have various tunnels and chambers and multiple entrances. Meerkats also maintain a series of bolt holes (Manser, 2001) which are holes in the ground that do not lead to elaborate underground burrow systems but instead provide quick cover for escaping predators.

The meerkat exhibit at the North Carolina Zoo currently holds 3.3.3 meerkats and has varied terrain, including artificial termite mounds, logs, stumps, and climbing structures that have been built out of large limbs. The exhibit has mulch and pea gravel to encourage the meerkats to dig.

While the exhibit offers the animals a complex and interesting environment, we wanted to do more. While brainstorming ways to improve our exhibit, we came up with the idea of creating a burrow system. In the past we have had some respiratory problems with our collection so the use of sand has to be kept to a minimum. Because the animals are not able to dig their own tunnels we decided to provide an artificial burrow for the animals to use.

Why?
We had several goals in mind while planning this meerkat burrow. We wanted to encourage species-appropriate behavior by offering the meerkats a tunnel system that may resemble something they would inhabit in the wild. In fact, meerkats often inhabit tunnels created by other animals like ground squirrels as opposed to digging their own. We also wanted to give the meerkats a visual barrier so they could feel comfortable in an exhibit surrounded on nearly all sides with glass. The burrow system offered the meerkats a place to hide when they felt threatened by the public. In addition, the building that houses the meerkat exhibit has a tent-like canvas roof. Many times during the day shadows of airplanes or birds can be seen from inside and the meerkats often need areas that can act as artificial bolt holes.

We also suspected that the meerkats may use the burrow system as a birthing chamber. Our group has a history of infanticide. One possible reason for this is that the mother feels stressed about a lack of privacy and kills the infants herself. We hoped the burrow system would offer the meerkats a safe place for their pups.

The Details
Our first thought was to use 4" PVC pipe. The exhibit already contained a few lengths of this so we knew that the meerkats could fit into it and that they were comfortable with the material. However,

when we went to the local hardware store in search of possible PVC fittings, we discovered another material called Acrylonitrile-Butadiene-Styrene pipe or ABS. The ABS appealed to us because it was black and would therefore blend into the exhibit better.

We purchased two three-meter (10 foot) lengths of 4" ABS pipe, and12 different versions of elbows, wyes, and tees (Figure 1). We also purchased a 4 x 4 x 6 tee which would allow one area of the burrow to widen a little, creating a den space for the group. We didn't have any specific plan in mind as to how the burrow system would be laid out, but instead bought those pieces that seemed like they would lend themselves to a variety of configurations with the burrow.

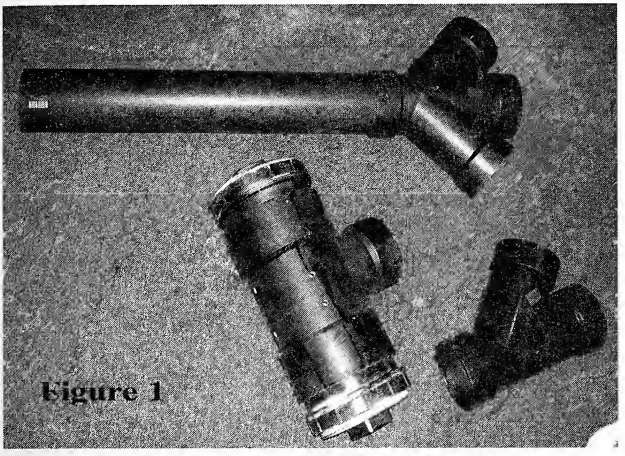


Figure 1

During construction of the burrow we made several decisions in order to make the lives of the keepers and the animals a little easier. We decided to drill several 2.5 cm (1/2 inch) air holes along the pipes. This was mostly for safety and to help with heat issues. Summers in North Carolina can get very warm and several meerkat bodies huddled together in a small pipe can be hot. We wanted to provide some air flow for those individuals inside.

We also decided to not glue the burrow system together. This would allow for several things. First, leaving the burrow unglued allowed us to change the configurations of the burrow whenever we wanted, which we expected would be enriching for the animals. We also decided to not glue the burrow together for easier cleaning. Currently we take the entire burrow system out of the exhibit every two weeks and disinfect it. In addition, being able to pull the burrow apart easily has helped us to find an animal quickly or catch an animal for medical treatment.

We also created the burrow in a way that offered several escape routes so that it would be difficult for an animal to become trapped in the pipes. Multiple fittings allowed us to offer several options for entrances and exits in and out of the burrow. Figure 2 shows one example of a burrow system that we have used.

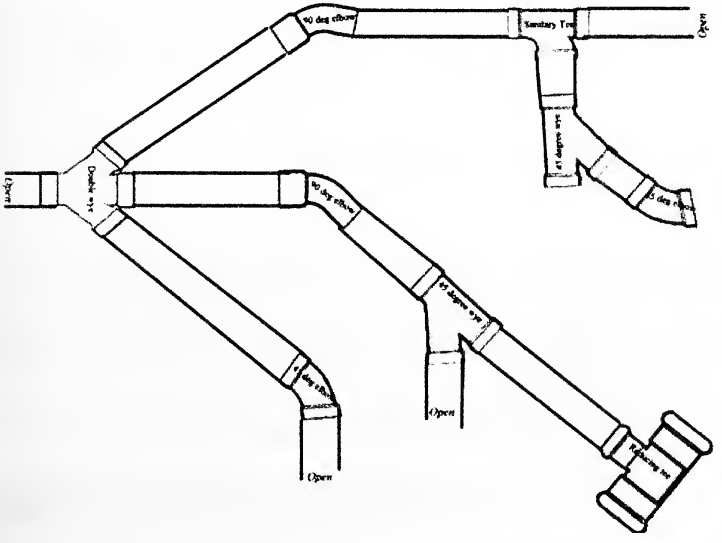


Figure 2

Challenges

While we have seen many benefits of the artificial burrow system, the tunnels have created some challenges. It can be difficult to get quick head counts first thing in the morning and throughout the day. On more than one occasion keepers have had to go in and take apart the burrow to check for a "missing" individual.

Another issue with the burrow has been aesthetics. While the ABS pipe blended better than white or painted PVC pipe would have, it remained obvious to the public. This can be problematic in some institutions. We tried burying the pipe under the substrate but the meerkats repeatedly dug it up, exposing the pipe to the public. Our most recent solution has been to "hide" the burrow behind stumps, mounds, and logs to lessen the amount of the burrow visible to the public. However, it should be noted that some studies show that the presence of unnaturalistic enrichment in zoo exhibits does not negatively impact visitors' perceptions (McPhee, Foster, Sevenich, and Saunders, 1998).

Does it work?

On 14 September 2006, our dominant female gave birth to a litter of three pups. She gave birth in an overturned black plastic tray, an enrichment item that had been placed in the exhibit the night before. The next morning she was observed moving the pups across the exhibit to the ABS pipe burrow. Throughout the next several weeks, this is where the pups remained. The adult females would leave the burrow when food was placed in the exhibit, but then return to the pipes immediately after eating. When the pups first started coming out onto the exhibit on their own, they could be seen nursing right next to the burrow (Figure 3). On more than one occasion when keeper staff or visitors got too close to the glass, one of the meerkats would make an alarm call and the adult closest to the babies would pick them up and quickly carry them into the nearest burrow opening, behaving just as a wild meerkat might.

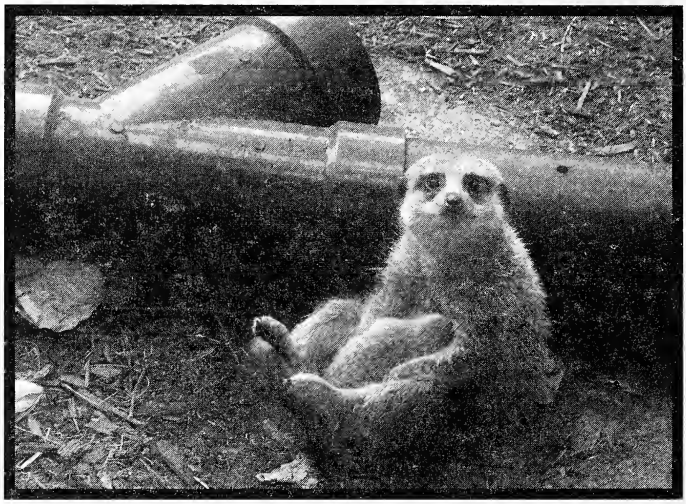


Figure 3

Conclusion

In institutions where materials to build natural burrow systems can not be provided for the meerkats, one alternative is the artificial burrow. We found the benefits of providing the burrow for the animals to far outweigh the costs. We would highly recommend that zoos consider implementing this solution.

I'd like to thank Chris Goldston, Lorraine Smith, Chris Lasher, Tamara Norton and Teri Merrimon for their assistance. Thanks!

References

Coe, J.C., 1997. "Entertaining Zoo Visitors and Zoo Animals: An Integrated Approach". *Annual Conference Proceedings*, American Association of Zoological Parks and Aquariums, Bethesda, MD.

Manser, M.B., 2001. "The Acoustic Structure of Suricates' Alarm Calls Varies with Predator Type and the Level of Response Urgency". Proceedings of the Royal Society B: Biological Sciences, 268 (1483): 2315 – 2324.

McPhee, M.E., Foster, J.S., Sevenich, M., Saunders, C.D., 1998. "Public Perceptions of Behavioral Enrichment: Assumptions Gone Awry". Zoo Biology 17:525-534.

Russell, A.F., Brotherton, P.N.M., McIlrath, G.M., Sharpe, L.L., Clutton-Brock, T.H., 2003. "Breeding Success in Cooperative Meerkats: Effects of Helper Number and Maternal State". Behavioral Ecology, 14(4): 486-492.

Chapter News Notes

Utah Chapter AAZK

It has been a momentous year for the Utah Chapter of AAZK. We had another outstanding Bowling for Rhinos, where we raised $14,200. On Labor Day, we had a very successful Cheetah Cha-Cha. We raised $2,100 that was sent to the Cheetah Conservation Fund in Kenya. We also provided valet parking for the Zoo's annual fundraising gala. The proceeds from this event were used to send some of our members to the National AAZK Conference and to support a black-footed ferret conservation project. But, the most exciting thing that happened this year was winning the bid for the 2008 National AAZK Conference. Plans are already in motion for a great conference.

Finally, the 2007 officers for the Utah Chapter are:

President.....Bethany Bingham
Vice President.....Crystal Derusha
Secretary.....Deana Walz
Treasurer.....Pat Meekins
Liaison.....Dawn Neptune

Rocky Mountain AAZK, Chapter

The Rocky Mountain AAZK Chapter at the Denver Zoo has had a great year in 2006, raising over $15,000 to donate to a variety of local and international conservation projects.

In March we held a bake sale that raised $600 for Grevy's Zebra facing a deadly strain of Anthrax. Bake sales are one of our most successful minor fundraisers, with staff from all over the zoo participating in the baking and the buying! This December we held another bake sale to benefit budding conservation researchers through the organization IdeaWild. Another fundraiser this year was our annual Raffle, which helped replenish our funds after aiding four of our keepers with their travel expenses for conferences and professional development training. Furthermore, our Chapter's Bowling for Rhinos event was a success, raising $1,600.

This spring our Chapter hosted a pair of representatives from Lewa Wildlife Conservancy in Kenya who gave a great presentation about tourism and conservation. Ticket sales and a silent auction of some items they brought from Kenya raised $700 that went straight back to Lewa.

Several of our members participated in Cheyenne Mountain Zoo's second annual Dream Night at the Zoo in hopes of starting our own event next year. The AAZK Chapter there hosted hundred of ill or disadvantaged children and their families in an evening they will be sure to remember. Thanks, CMZ Chapter for bringing us along for the ride!

Finally, our big annual fundraiser, Comedy Night at the Zoo, was a HUGE success! Josh Blue, the winner of Last Comic Standing, performed a hit show to a sold-out audience. Money from ticket sales, silent and live auctions, and a raffle allowed us to send $12,000 to four worthy conservation programs supporting Amur Tigers, Bongo, Orangutans and parrots.

Officers in 2006 are:

President.....Ann Zobrist
Vice President.....Nicole King
Treasurer.....Dave Johnson
Secretary.....Dawn Cummings
Liaison.....Jessica Meehan

--Jessica Meehan, Liaison

Nashville Zoo AAZk Chapter

We just wanted to thank our 2006 Executive Board members for all their hard word and dedication.

2006 Executive Board Members:

President.....Jessica Huff
Vice President.....Hall Whitaker III
Treasurer.....Stephanie Greene
Secretary.....Heather Moats
Historian.....Erin Swindlehurst

Proximity and Social Interactions of Captive Shoebill Storks (*Balaeniceps rex*) at the San Diego Wild Animal Park

By Sara Skillman[1], Caroline Pitt[1], & Michael Mace[2]

[1]Conservation and Research for Endangered Species (CRES) Zoological Society of San Diego, Escondido, CA 92027, USA

[2]Bird Department, San Diego Wild Animal Park, Zoological Society of San Diego, Escondido, CA 92027, USA

Abstract

The San Diego Wild Animal Park houses a rare captive bird, the shoebill stork (*Balaeniceps rex*). Reproduction in this species has not occurred in any zoological institution and little is known about sociality among the birds. Behavioral observation and analysis were performed to investigate social interactions among three shoebill storks (1.2). The birds interacted minimally, with bill clattering being the dominant social behavior exhibited. Rates of bill clattering and aggressive behavior were highest in the male. All three birds spent the majority of time in separate locations. Further research is needed to understand the characteristics associated with an optimal breeding environment for this species.

Shoebill Stork *(photo by Sara Skillman)*

Introduction

Shoebill storks (Fig. 1) are large sedentary birds that are camouflaged by their natural vegetation of papyrus and swamp grasses. They are rather solitary birds, and even when paired tend to spend a large amount of time alone (del Hoyo, 1992). Shoebill storks are relatively inactive birds, but will attack catfish, lungfish, or bichirs when feeding by the water's edge (Hancock et al., 1992). The breeding season in the wild depends on the seasonal flood cycle in Africa (Kuehler & Toone, 1989). The birds range from southern Sudan to northern Zambia (Hancock et al., 1992). Courtship and nest building, behaviors exhibited by both males and females, occurs during the rainy season allowing for the hatching of the chick during the dry season (Buxton et al., 1978). They are a monogamous species, with pairs remaining stable across seasons. In the wild, greeting behaviors appear to play an important role in social interactions between pair bonded birds (Brown et al., 1982).

The breeding behavior of shoebill storks has been minimally documented. The swampy, bug-infested habitat of east and central Africa make it difficult to observe this species in the wild (Kuehler & Toone, 1989). The shoebill stork is an extremely rare captive bird, with only a handful of zoological societies possessing this species in their collection (Kuehler & Toone, 1989). There have been no reports of successful breeding in captivity, and little is known about this species in the wild. Despite efforts made by zoological societies around the world, it remains unclear why this particular species has not yet reproduced in captivity. The San Diego Zoo's Wild Animal Park has made many efforts towards the captive breeding success of shoebill storks by providing several pairs with naturalistic environments, including providing live fish for consumption and using native vegetation in their enclosures. Given the lack of research on the natural behavior of this species, optimal breeding conditions in captivity is a focal area of interest in the management of the captive population. We

designed a study to systematically document the social interactions and proximity of a group of shoebill storks in order to gain some insights that might be useful for captive propagation.

Methods

All behavioral observations were conducted at the San Diego Zoo's Wild Animal Park, in Escondido, CA. Three shoebill storks (1.2.0) are provided 24-hour accommodation in a lagoon enclosure that mimics their natural environment. The enclosure is shared with several species of both native and collection birds. The lagoon consists of three separate islands with the water level between the islands shallow enough for wading birds. Because the birds were hand-reared, they are hand-fed a diet of fish and mice. The enclosure also consists of vegetation native to Africa, such as papyrus and reedbeds (Hancock et al., 1992).

The three birds were born in the wild in 1988. Each bird is uniquely banded, allowing for individual recognition: the male (Male) is banded on his right leg, one female (referred to as Female) is banded on her left leg, and one female is not banded (referred to as Female NB). When data collection began, the Male and Female NB were located on two islands (A and B) in the enclosure, and the banded Female was located on the third island (C) (Figure 2). Islands A (5.5 by 9.6 meters) and B (5.5 by 12.8 meters) were separated from island C (7 by 6.4 meters) by a large gate of a distance of approximately six meters. A shallow underwater area extends around all islands by 1.4 meters, as well as between Island B and C. The birds are able to walk in the water while standing on the underwater sandy area. The two outermost panels of the gate were opened up to allow for movement on either side of the gate once observations had begun

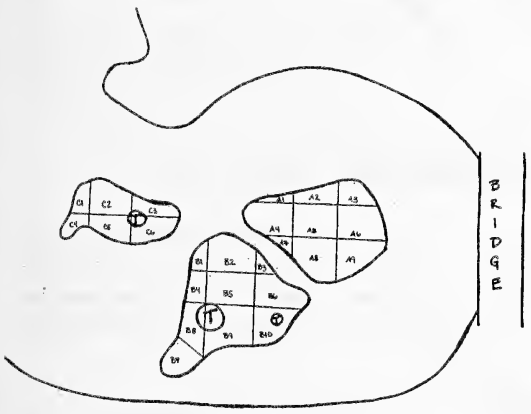


Fig. 2 Diagram of the lagoon area where shoebill storks are housed at the Wild animal park. "T' represents trees.

Observations occurred primarily in the morning (0700-0900 hrs), with further supplemental observations occurring in the mid-afternoon (1500-1700 hrs) and late afternoon (1700-1900 hrs) for a total of 66 hours of observation during the months of July and August 2006. Data were recorded on an all-occurrences basis (Altmann, 1974) for any social behavior witnessed because all three animals were visible during all observation sessions. Rates and durations were calculated from these data. The behaviors recorded are listed in Table 1.

Table 1. Partial ethogram of observed behaviors used in analysis

Head Shaking (HS)	Head moves back and forth
Bowing (B)	Bird lowers head towards ground; usually occurs with *head shaking*
Bill Clattering (BC)	Bill is raised vertically and is rapidly opened and closed to produce sound
Approach (A)	Bird moves directly towards another bird
Submission (S)	Bird lowers body towards ground, spreads wings, and observes the other bird's actions
Manipulate Nest Material (MNM)	Bird uses bill to manipulate nest vegetation

Results

An activity budget (Figure 3) for each bird was constructed to show the percentage of time each social behavior was exhibited over all observations. The most frequent behavior exhibited by all three of the individuals was bill clattering. Bill clattering was observed most frequently by the male, constituting almost 90% of his activity budget. Both females spent less time bill clattering,

indicating a slight sex difference in this behavior. The other social behaviors, such as head shaking, bowing, and approaching, were exhibited considerably less often, making up less than 20% of total activity. Submissive behaviors were only seen with the Female.

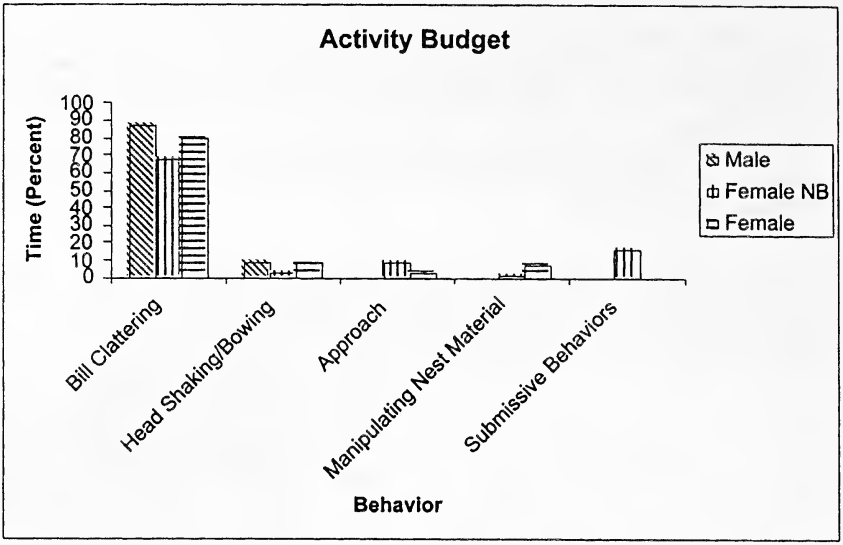


Fig. 3 - Activity budgets of social activities for captive shoebill storks

Rate of bill clattering per observation period and average duration were recorded for each individual. There was a strong sex difference in rate of bill clatters (Table 2). Both females, on average, bill clattered once per observation session. The male averaged a rate of six bill clatters per session. Average duration revealed no strong difference between any of the individual birds, with a typical bill clattering lasting approximately 3-4 seconds in length.

Table 2. Average rate and duration of bill clattering

	Rate (Average times per observation period)	Duration (Average number of seconds per bill clatter)
Male	6.09	3.81
Female NB	.97	3.44
Female	.93	2.81

Locations in the lagoon were plotted for each shoebill stork throughout the observation period (Figures 4, 5, and 6). Each bird spent the majority of time in one particular location on separate islands. The 'other' category consisted of additional locations that were occupied for only a small percentage of time. The Male and Female NB spent less than 50% of their time in locations A8 and B7, respectively. The Female spent nearly 60% of her time at location C6.

Discussion

Analyzing social interactions can provide important information on the interaction patterns between two or more animals, and assist in the development of effective breeding and management plans. In Shoebill storks, bill clattering appears to be a greeting behavior that plays an undefined role in social interactions between birds. The frequency of bill clattering and the effects seen in the behavior of surrounding individuals may help understand other social behaviors that are commonly exhibited. The majority of the social behaviors recorded for all three birds was bill clattering. Although the average duration of bill clattering was similar between males and females, the male clattered at a much higher rate, suggesting a strong sex difference in energy devoted to this activity.

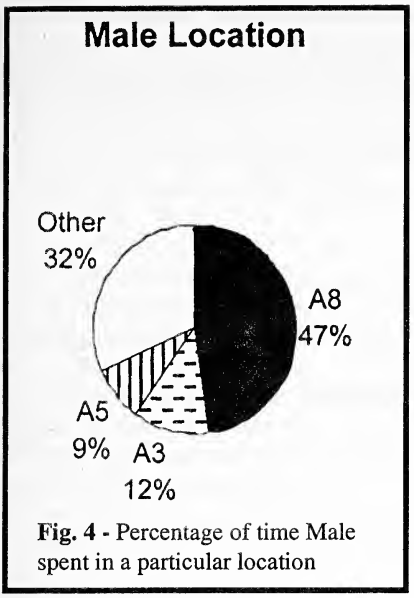


Fig. 4 - Percentage of time Male spent in a particular location

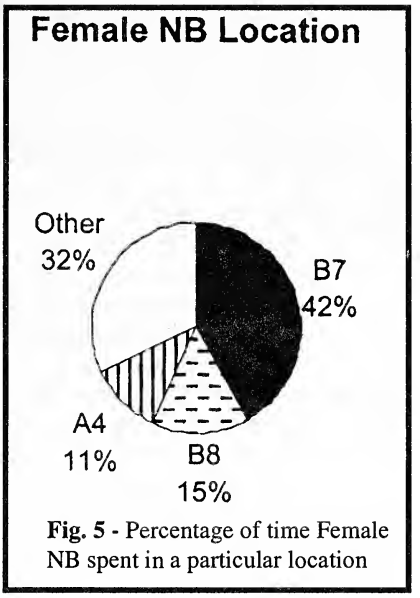


Fig. 5 - Percentage of time Female NB spent in a particular location

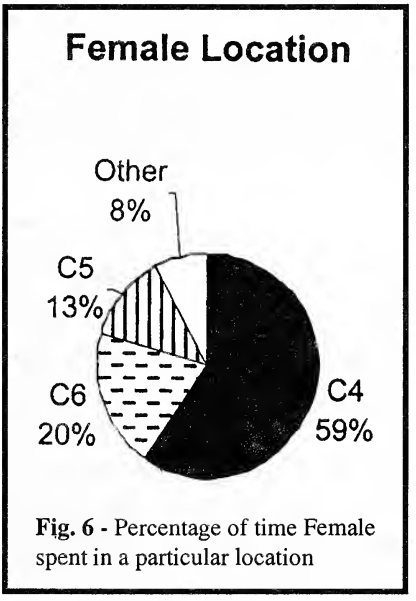


Fig. 6 - Percentage of time Female spent in a particular location

Female NB was the only shoebill stork to show submission to another bird, exhibiting submissive behaviors every time she was in close proximity to the male. The submission by Female NB was associated with aggressive tendencies directed at her from the male. Because the other female was isolated from the other two shoebill storks, she never exhibited any type of submissive behaviors towards either bird. The lack of submissive behaviors in the male, associated with a relatively high frequency of submissive behaviors in Female NB, indicats a likely dominance pattern between the paired individuals. Futher investigation with a larger sample size would assist in identification of potential hierarchical relationships, and sex difference in rates of submissive and aggressive behavior. Understanding interaction patterns could also play a crucial role when deciding appropriate coupling of two birds for the formation of a breeding pair.

All three shoebill storks spent a large portion of time in one specific grid on separate islands. The relatively solitary nature shown by the location data suggests the solitary behavior reported in the wild is a consistent pattern in a captive environment. The birds rarely came into close proximity with each other, except in cases of aggression. Each of the favored locations contained a nesting platform comprised of papyrus leaves, which are used to construct nests in the wild. By the end of data collection, the Female, who was previously isolated from the other two birds, voluntarily walked to the area of islands A and B. She remained in that portion of the enclosure, although not in proximity to the other two birds

Due to the limited amount of information on this species, many questions have been raised. During early morning observations, the birds appeared to be more active than during the afternoon observations. This could be due to the presence of keepers in the morning and their feeding schedule. Their low levels of activity during the afternoon could be related to the change in temperature, increased number of visitors, or absence of keepers. Bill clattering, also suggested to be associated with territorial behavior, was used frequently in this manner in the presence of male zookeepers. Further investigation into the social behaviors and possible interactions within a pair bond is important for the understanding and conservation of this unique species. Systematic data collection on social behavior patterns in a species such as the shoebill stork, can assist with management decisions associated with the care and housing of a captive collection that could lead to future reproductive success in captivity.

Acknowledgements
We would like to thank Fred Bercovitch for support with the research project, and the Bird Department at the Wild Animal Park, especially Debbie Marlow, John Hollinshead, Don Sterner, Dave Heckard, and Jamie Ries for their contributions on the project. The CRES Summer Student Fellowship provided funding for the research.

References

Altmann, J. (1974) Observational study of behavior: sampling methods. Behaviour 49: 227-267.

Brown, L.H., Urban, E.K., & Newman, K. (1982). *The Birds of Africa.* Vol. 1. New York: Academic Press, 190-193.

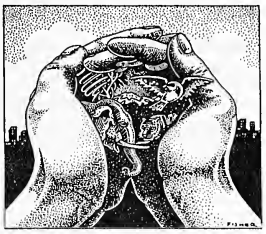
Buxton, L., Slater, J., & Brown, L.H. (1978). The breeding behaviour of the shoebill or whale-headed stork *Balaeniceps rex* in the Bangweulu Swamps, Zambia. *E. Afr. Wildl. J.,* 16, 201-220.

del Hoyo, J., Elliott, A., & Sargatal, J. Eds. (1992). *Handbook of the Birds of the World.* Vol. 1. Barcelona: Lynx Edicions, 466-471.

Hancock, J.A., Kushlan, J.A. & Kahl, M.P. (1992). Storks, Ibises, and Spoonbills of the World. San Diego: Academic Press.

Kuehler, C. & Toone, W. (1989). The shoebill: shy creature of the swamps. *Zoonooz, LXII* (5), 5-9.

Conservation/Legislative Update



Indonesia Forest Fires, Attacks Kill 1,000 Orangutans

About 1,000 orangutans (*Pongo pygmaeus pygmaeus*) are estimated to have died in Indonesia during the dry season of 2006 in which raging forest fires have produced thick smoke across huge areas of Southeast Asia. The fires in the Indonesian part of Borneo have deprived orangutans of food and forced them to encroach on human settlements, where they are often attacked for damaging crops, the Borneo Orangutan Survival Foundation said. Most of the annual dry season fires are deliberately lit by farmers or at the behest of timber and oil palm plantation companies.

"Orangutans are starving. They are sick and many of those we are treating were injured after being attacked by machetes," Willie Smits, an ecologist at the foundation told Reuters, adding that many also suffered from respiratory problems. He said 120 sick orangutans had been treated in three conservation centres and 10 to 15 of them had died.

Orangutans live on the islands of Borneo and Sumatra, but encroachment on their habitats by humans and massive destruction of forests is threatening their existance. In 2002, it was estimated there were 56,000 orangutans in the wild but the population has dwindled at a rate of 6,000 a year, conservationists say.

Heavy rain brought a respite to fires in Borneo's Kota Waringin Barat where about 6,000 orangutans live at the Tanjung Puting national park, according to the park's director Bambang Darmaji. However, during the heights of the fires, smoke was so dense that the airport in Palangkaraya, the capital of Central Kalimantan province, remained closed due to poor visibility. *Source: PlanetArk World Environmental News 9/11/06.*

Monkey Form of HIV May Be Endemic in Wild Gorillas

A monkey virus similar to HIV is endemic in wild gorillas in Africa and was probably transmitted to them by chimpanzees, researchers recently reported,

About 40 million people worldwide are living with HIV/AIDS. The origins of two of the three strains of the virus in humans have been traced back to monkeys in Africa infected with simian immunodeficiency virus (SIV) but the source of the third has been unknown, until now.

"It is the first time that someone has done a survey among wild gorillas to see whether they were infected with an SIV," said Martine Peeters, a virologist at the University of Montpellier in France. "We showed they were infected and moreover they are infected with a virus that is closely related to HIV-1 and a particular variant O," she added in an interview.

HIV is thought to have been passed on to humans when they slaughtered infected chimpanzees for food. About 25 million people have died of HIV/AIDS since the virus was identified a quarter of a century ago.

There are three strains or groups of HIV — M, N and O. Group M is the most common strain and has spread around the globe. Strain N is linked to few cases in Cameroon and group O represents about one percent of HIV/AIDS cases in Cameroon and surrounding countries. "It is only there that we find it," Peeters explained, referring to the O strain.

She and her colleagues collected and examined hundreds of droppings from wild gorillas and chimpanzees living in remote forest areas in Cameroon. The animals are still hunted for food and medicines. An analysis of the samples showed the gorillas were infected with a strain of SIV-

related to the O group. The infected gorillas lived nearly 400 kilometers (248 miles) apart so the scientists believe it is likely SIV infection is endemic in the animals. How the animals acquired it is also a mystery because gorillas are vegetarians and encounters with chimpanzees are thought to be rare.

"We have discovered it in gorillas but we think the primary reservoir are still chimpanzees. We think chimpanzees transmitted it to gorillas but we don't know who transmitted it to humans — the gorilla or the chimp," Peeters, who reported the findings in the journal *Nature*, said.

Knowing the origin of the HIV and that is crossing species is important for understanding what happens to the virus when it jumps species. *Source: Yahoo News/Reuters Nov. 8, 2006 by Patricia Reaney*

Rare Ethiopian Lion Cubs Poisoned to Save Expense

Rare Abyssinian lion (*Panthera leo roosevelti*) cubs are being poisoned at a zoo in Ethiopia and sold to taxidermists because there isn't enough money to care for the animals, the facility's administrator said recently.

Famous for their black manes, the lions are revered in Ethiopia, adorning statues and the national currency. Wildlife experts estimate only 1,000 of the animals, which are smaller than other lions, remain in the wild.

"These animals are the pride of our country, but our only alternative right now is to send them to the taxidermist," said Muhedin Abdulaziz, who heads the Lion Zoo in the capital, Addis Ababa.

The zoo costs about $6,000 to run each month, but gets only $5,000 in entrance fees, he said. Taxidermists pay $170 for a dead cub, which is stuffed and resold, Abdulaziz said. Hunters also kill wild lions for their skins, which can fetch $1,000.

The Lion Zoo had poisoned six cubs in 2006, Abdulaziz said, adding that the practice has been going on at least since he arrived two years ago. He did not say how many cubs have been killed over the years. The zoo director said federal wildlife officials monitor the poisoning, which he described as painless. Officials of the national government did not immediately return calls for comment.

Mesganu Arga, head of the Information and Culture Bureau in Addis Ababa, said the city was looking into the matter. "These are rare animals and a treasure to the country," Mesganu said. "We are promoting these lions."

The Lion Zoo is a popular attraction, although international wildlife groups have expressed concern about its ramshackle facilities. Built in 1948 by Emperor Haile Selassie, it houses 16 adult lions and five cubs in cages surrounded by barbed wire. Animal conservation groups expressed outrage at the killings. James Isiche, regional director of the International Fund for Animal Welfare in Nairobi, Kenya, said the zoo should prevent the animals from breeding if it can't care for them. "Enforcement to protect these animals is critical," he said.

The Born Free Foundation called for an investigation into the animals' treatment. "We would encourage the authorities to take action to establish, at the very least, a sanctuary for lions and to enforce whatever laws are necessary to prevent those lions from being unnecessarily killed, sold or given into trade, alive or dead," said Will Travers, chief executive at the British-based foundation. *Source: Born Free Foundation: http://www.bornfree.org.uk*

Study Shows Humpback Whales Have 'Human' Brain Cells

U.S. Research have reported that humpback whales (*Megaptera novaeangliae*) have a type of brain cell seen only in humans, the great apes, and other cetaceans such as dolphins. This might mean such whales are more intelligent than they have been given credit for, and suggests the basis for complex brains either evolved more than once, or has gone unused by most species of animals, the researchers said.

The finding may help explain some of the behaviors seen in whales, such as intricate communication skills, the formation of alliances, cooperation, cultural transmission and tool usage, the researchers report in *The Anatomical Record*. Patrick Hof and Estel Van der Gucht of the Department of Neuroscience at Mount Sinai School of Medicine in New York studied the brains of humpback whales and discovered a type of cell called a spindle neuron in the cortex, in areas comparable to where they are seen in humans and great apes. Although the function of spindle neurons is not well understood, they may be involved in cognition -- learning and remembering. *Source: www.cnn.com Nov. 2006*

Denver Zoo Tries To Save Tiny Endangered Frog

The Denver Zoo is part of an effort to save a disappearing frog species that has become Panama's national symbol of nature. Scientists fear that sometime next year, the last wild Panamanian golden frogs (*Atelopus zeteki*) will die. The species is being destroyed by a fungus that is also wiping out other amphibian species. The fungus was only the final blow for a species whose numbers have long been dwindling because of deforestation, overcollection and water pollution.

But about two dozen zoos, including the Denver Zoo, have several hundred of the frogs in captivity. So far, the Denver Zoo is one of only three zoos that have been able to coax captive-bred Panamanian golden frogs to reproduce. The zoo is part of Project Golden Frog created to try to save the critically endangered frog.

Rick Haeffner, the zoo's reptiles curator, said one of the biggest problems the program faces is that until the fungus goes away, there's nowhere to release the frogs into the wild.

Photo: Denver Zoo/David Parsons

Native to Central America, the Panamanian frog's bright colors provide a good example of warning coloration. Its skin produces poison when it is attacked, causing pain to its predator. *Source: The DenverChannel.com 11-27-06*

AKF Seeks Legislative /Conservation Advisor

With the retirement of Georgann Johnston, Sacramento, CA, as the the coordinator for the Legislative/Conservation Update column, we are now seeking an individual interested in filling this position. The position requires the gathering of items on legislation affecting wildlife and items of interest in the realm of conservation for publication in *AKF*. Anyone interested in this volunteer position should have computer access and be able to adhere to monthly publication deadlines.

Animal Keepers' Forum 2006 Index
Volume 33, Numbers 1-12

AARDVARKS & OTHER BIOTA

Acouchi, Green 105
Ankole 28, 30
Armadillo La Plata three-banded 73-78
Baboon, Olive 528
Bat, Fruit 57
Bear
  Grizzly 24, 307
  Polar 71-72, 118, 153-154, 190-192, 216-217, 307, 346-347
Bobcat, Mexican 346
Bustard
  Black-bellied 526
  Buff-crested 526
  Kori 116,523-529
  White-bellied 526
Butterfly, Miami blue 24
Camel, Bactrian 402-404
Caracal 524
Chachalaca, Grey-headed 291-295, 297
Cheetah 510-511, 528
Chimpanzee 251-253, 408
Crane
  East African crowned 28, 30
  Nonspecific 426
  Whooping 332-341
Crocodiles, Dwarf 379-382
Dik dik 528
Dolphin, Yangtse 218
Dragon
  Bearded 377-378
  Jacky 377-378
Eagle
  Bald 241,243
  Bateleur 528
  Martial 524, 528
  Tawny 524
  Verreaux's 524
Eland 528
Elephant
  African 27, 86, 528
  Asian 153, 458, 544
Elk 497
Emu 483
Falcon, Peregrine 226
Finch
  Yariguies brush-finch 542
Flamingo, Caribbean 193
Flying fox 281-287
Frigate Bird, Christmas Island 154
Frog
  California red-legged 543
  Crawfish 411
  Cricket 411
  Green 411
Frog (cont'd)
  Harlequin 117-118
  Mountain chorus 411
  Nonspecific 379-382
  Northern leopard 411
  Pickerel 411
  Southern leopard 411
  Upland chorus 411
  Wood 411
Gazelle, Grant's 28, 30-31
Giraffe, Reticulated 28, 30, 393, 528
Go-away-bird, White-bellied 528
Gorilla
  Mountain 308, 347-348
  Nonspecific 154, 179, 254-256, 345, 406, 408, 459
  Western Lowland 2, 438-443,456, 493-494, 542
Goshawk, Pale chanting 528
Grouper 449
Hammerkop 528
Hellbender 493
Heron, Goliath 528
Hippopotamus 528, 541
Hog, Red river 28-31
Hoopoe 528
Hornbill
  Abyssinian ground 28, 30
  Blyth's 155-161
  Red-billed 528
  Von der Deckon's 528
Hyena, Spotted 524, 528
Hyrax, Rock 528
Ibis
  Hadada 528
  White shouldered 241
Iguana
  Green 105
  Rhinoceros 377, 378
Impala 314, 528
Jackal, Black-backed 524, 528
Jaguarundi 87, 363
Kingfisher, Belted 410
Koala 542
Kudu, Greater 528
Langur, Douc 489-491
Lemur
  Red-ruffed 262
  Ring-tailed 266
Leopard 524
Lion
  African 345-346, 524

Lions (cont'd)
Asiatic 347
Mountain 497
Nonspecific 450
Lizard
Nonspecific 379-382
Magpie Jay, White-throated 291-295, 297
Meerkat 484-488
Mongoose, Dwarf 257-259
Monitor, Lace 378
Monkey
Allen's swamp 306-307
Angolan colobus 349-358
Black-handed spider 497
Goeldi's 288-289
Old World 463
Mouse, Cypriot 543
Nyala 28, 30-31
Ocelot 87, 363
Okapi 463
Orangutan
Bornean 152, 240-241
Nonspecific 495
Sumatran 152, 240-241
Oryx 528
Ostrich 28, 30, 528
Otter
African clawless 200
Asian small-clawed 451-456
Sea 217
Spotted-necked 200
Oystercatcher, American 342-343
Owl, Great horned 497
Panda, Giant 97, 299-300, 394-401, 420-426, 494
Parrot, Ruppell's 217
Penguin
Magellanic 533-540
Rockhopper 20-23
Plover, Piping 342
Rabbit, Pygmy 306
Ratites 134, 483
Rhea, Greater 483
Rhino
Black (non-specific) 497, 544
Greater Indian 122-124
West African black 405-406
Saki Monkey, Pale-headed 105-106
Sea Lion, Stellar's 33
Secretary Bird 528
Seriema, Red-legged 291-294,296-297
Sheep
Bighorn 362
Blue 152
Siamang 207-214
Skink
Blue-tongued 377-378
Cunningham 377-378
Sloth, Two-toed 105
Snake
Brown 377
Nonspecific 379-382, 427
Stilt, Black-necked 342-343
Stork, Maribou 28, 30
Storsjoodjuret 24
Tamarin, Golden lion 105-106
Tapir, Baird's 110-114
Tanager, Silver-beaked 105
Thick-knee, Spotted 528
Tiger
Bengal 116
Indo-Chinese 116
Nonspecific 405, 495
Toad
American 411
Fowler's 411
Narrowmouth 411
Puerto Rican crested 493
Tortoise 380-381
Galapagos 317
Nonspecific 380-381
Treefrog
Barking 411
Bird voiced 411
Cope's gray 411
Gray 411
Green 411
Turtle
Alligator snapping 71
Map 71
Sea 25
Vultures
King 291-294, 296-297
Ruppell's griffon 28, 30
Waterbuck 28, 30-31
Whale
Beluga 544
Humpback 153
Orca 117
Wolf 25, 116-117
Chinese 152
Gray 52, 216
Zebra
Grant's 473-476
Grevy's 148-149, 267-268, 301-304,528
Plains 528

AMERICAN ASSOCIATION OF ZOO KEEPERS

2005 AAZK Conference
Message from the Chair 90
2006 AAZK Conference
Announcement 59, 99
Call for EnrichmentVideos 344
Call for Papers 58
Chapter Challenge 47, 98
Thank You from the Executive Director 461
Update 188, 274-275, 320-321
Website 4
2007 Elections 522
AAZK 800# Problem Resolved 179
AAZK Animal Data Transfer
Forms Available Online 231, 298, 450
AAZK Book Sale 215
AAZK Institutional Membership
Drive Proving Successful 503
AAZK Member's Viewpoint 318
AAZK Members Get SpecialRates
with Snow Leopard Trust 364, 462
AAZK New Members
7, 57, 97,137, 187, 231, 273, 317,371, 414, 464, 509
AAZK Publications
and Accessories Available 244
AAZK Product Line T-shirts 65-68
AAZK Requests Member's
E-mail Addresses 3, 47, 179,227, 268, 370, 414
AAZK Seeks Missing Member 179
AAZK Seeks Help fromAmazon.com Users
184, 268, 270, 344, 449, 505

Chapters

AAZK Chapter Fundraising Efforts Support the
Northern Rangelands Endangered Species Program
for Grevy's Zebra in Kenya 301-304
Adventures in AAZK Calendar
Making and Sales 436-437
Canadian Chapter Makes Donation 267
Chapter E-Newsletter to Debut 3
Chapter Matches Zoo's
Institutional Membership Fee 459
Chapter News 32-33, 64,125-127, 166-168, 196,
250, 290, 390, 444-445, 482
Chapters Show Support by
Donating to AAZK Inc. 459
Cleveland AAZK ChapterDonates to
Lewa School Lunch Program 232
Dallas Chapter Donates $2000 - Thank You! 315
New Orleans Chapter Donates to AAZK 503
North Carolina Chapter Sends National Support 363
Recharter Packets 3, 47, 504
Thank You from New Orleans Chapter President 461
Update from the New Orleans Chapter
and Audubon Institute 89-90
Wildlife World Zoo AAZK
Chapter Supports CPR 411

Committees

Animal Training
Articles 331,512, 420-426
Seeks New Members 236
Update 194-195
Awards
2006 Recipients 416-418
Jean M. Hromadka Excellence
in Zookeeping 50
Certificate of Merit for Zookeeper Education 51
Certificate of Excellence in
Exhibit Design Renovation 51-52
Lee Houts Environmental Enrichment 96, 165
2005 Recipient 435
Lifetime Achievment 94
Mazuri Animal Nutrition 138
Meritorious Achievement 95
Bowling for Rhinos 2006 54, 186
Blue Rhino Sponsorship 3, 372-373
Breaks New Record 505
Note from the Coordinator 132
Update 249
Marketing
Seeking Members 4
Professional Development
Contact Update 267

Donation Acknowledgement 88
Donations Support AAZK's
Operation Budget 47
From the Editor 87, 411
From the Executive Director 49, 135,181-182, 228,
315, 413, 461, 466, 508
From the President 5, 92,184, 270, 366
Letter from Lutz Ruhe to AAZK Membership 467
Notice to the AAZK Membership 512

Animal Keepers' Forum 2006 Index

Volume 33, Numbers 1-12 - Articles/Columns

About the Cover

African elephant and calf 86
Asian elephants 458
Belted kingfisher 411
Bighorn sheep 362
Impala and fawn 314
Magellanic penguin 502
Peregrine falcon 226
Ratites 134
Ring-tailed lemur 266
Serval 178
Stellar's sea lion 33
Western lowland gorilla 2

Animal Behavior Concerns & Solutions

Message from the Column Editor 364

Animal Keeper Association of Africa (AKAA) 168-169

Animal Training Committee (ATC)

The Animal Training Committee Presents: *Training Tales* 331, 512
Teaching Operant Conditioning Methods and Training ProgramManagement in China 420-426
Update 194-195

Articles

AAZK Chapter Fundraising Efforts Support the NorthernRangelands EndangeredSpecies Program for Grevy's Zebra in Kenya 301-304
An AAZK Conservation, Restoration, and Preservation Grant Project: Otters and Clean Water in East Africa,a Swahili Coloring Book 200-203
Adventures in AAZK Calendar Making and Sales 436-437
Advances in Animal Keeping in Zoos and Aquariums 496-498
Birth and Development of a La Plata Three-banded Armadillo 73-78
Cheetah Protected Contact Device 510-511
Creation of a Bill Sleeve and the Use of Operant Conditioning to Improve the Care of Hornbills at Lincoln Park Zoo 155-161
A Critical Evaluation of Artificial Insemination of Whooping Cranes at the Calgary Zoo During the 2005 Breeding Season 332-341
Enriching Lives One Slice at aTime 278
The Feather Distribution Project: Protecting Wild Parrots and Macaws from Home 34-35
Flamingo Helpers 193
Hand-rearing a Baird's Tapir 110-114
How Training and Understanding Behavior was Used to Medicate and Evaluate a Terminally Ill Douc Langur 489-491
The Husbandry and MedicalManagemet of Over-groomed Meerkat Kits 484-488
In Memory of Neal Duncan, Animal Keeper Extraordinaire 368-369
The Life of a Baby Angolan Colobus 349-358
Management and Treatment of Avian Chlamydiosis in a Captive Magellanic Penguin Colony at the San Francisco Zoo 533-540
My Life with Zoo Animals 468-472
Overcoming Training Difficulties in a Mixed Species Exhibit 105-106
Positive Reinforcement Training for Biomedical and Reproductive Management of Giant Pandas 394-401
A Preliminary Study of the Health Status of Kori Bustards in Kenya 523-529
A Process for Successfully Reintroducing a Hand-Reared Infant Siamang to Its Parents 207-214
Quest Chests: Educational Activity Boxes 260-262
A Real Life "King Kong" Story: Training an Assertive 1.0 Western Lowland Gorilla and Making the Most of Birmingham Zoo's Animal Training Course 438-443
Rectal Prolapse in a Greater Indian Rhino at the Toronto Zoo 122-124
Red River Hog Introduction at Disney's Animal Lodge 28-31
Reduce, Reuse, Recycle 247-249
Research Collaborative for Conservation: Zoos and Universities Working Together 148-149
Rollie and Mumbali's Journey 254-256
Scale Training the Malayan Flying Fox 281-287
Scale Training Zebra at Disney's Animal Kingdom Lodge 473-476
Semen Collection on RockhopperPenguins at the Indianapolis Zoo 20-23
So You Want To Be A Zookeeper? Food, Fun, and Feces at the Zoo 60-62
Times They are a-changing ZIMS: What will it mean to you? 205-206
Training 3.0 Dwarf Mongooses at the Newark Museum Mini Zoo 257-259
Turning a Daily Routine into Conservation Dollars 387-389
The Ups and Downs of Hand-raising Precocial and Altricial Birds in Zoos 291-298
Using Behavioral Observations to Detect a Gastric Ulcer in an Asian Small-Clawed Otter 451-456
Using Training to Eliminate the Need for Chemical Sedation 402-404
What is a Duck Derp? 145-146
What's in a name? Su Lin: Pandas Past and Present 299-300

Book Reviews

1491: New Revelations of the Americas Before Columbus 323-324
Amphibians & Reptiles of the Bay Islands and Cayos Cochinos, Honduras 151

Book Reviews (cont'd)

Amphibians, Turtles, and Reptiles of Cheyenne Bottoms 239
Arctic Animals and Their Adaptations to Life on the Edge 238-239
BSAVA Manual of Psittacine Birds, Second Edition 386
Captive Foraging: The Next Best Thing to Being Free (DVD) 427-428
Discovering Dolphins 530
Encyclopedia of Animal Behvior (Volumes 1-3) 120-121
Essentials of Disease in Wild Animals 310
Frogs: Inside Their Remarkable World 150-151
Handbook of Primate Husbandry and Welfare 324-325
Hippos: Natural History & Conservation Worldlife Library Series 239
Images of America: New York City Zoos and Aquarium 238
Jambi and the Lions 150
Longevity of Mammals in Captivity from the Living Collections of the World 120
Nationwide Assessment of Morphological Abnormalities Observed in Amphibians Collected from US National Wildlife Refuges 428
Practical Wildlife Care 2nd Ed. 309
Sailing with Noah, Stories from the World of Zoos 499-500
Snake Venoms & Envenomations 427
The Snakes, Lizards, Turtles,and Amphibians of Fort Riley and Vicinity 121
Turtles of the World 530

Conferences - Schools -Workshops

2006 International Gorilla Workshop 6, 48, 91, 136, 230
2007 Rhino Keepers Workshop 505, 506
6th Annual Callitrichid Behavioral Husbandry and Management Workshop 506
7th Annual Animal Behavior Management Alliance (ABMA) Conference 230, 269, 316,365, 412, 463, 506
14th Annual Conference of the International Association of Avian Trainers and Educators (IAATE) 6
The 15h Annual IAATE Conference 365, 412, 506
The 18th International Zoo Educators Conference 2006 463
The 18th IZE Conference 2006 269, 316, 365, 412
21st Congress of the International PrimatologicalSociety 6
The 23rd EAZA Annual Conference 269, 316, 365, 412
27th Elephant Managers Association Conference 48, 91, 136, 183, 230, 269, 316, 365, 412, 463
33rd AAZK InternationalConference 6, 48, 59, 91,99, 136, 183, 230, 316, 365
AAZK National Conference 506
AAZV Annual Conference 91, 136,183, 230, 269, 316, 365
Amphibian Biology and Management 506
Management Animal Behavior Alliance Conference 6, 48
Animal Behavior Society's 43rd Annual Meeting 72
Animal Training Seminar 6, 48,91, 136, 183, 230, 269, 316, 365
Association of Avian Veterinarians 136, 183, 230, 269, 316
The Association of British Wild Animal Keeper Symposium 2007 506
The Association of ZooVeterinary Technicians 26th Annual Conference 183, 230, 269, 316, 365
Australasian Society of Zookeeping (ASZK) Annual Conference 506
AZA Annual Conference 6, 48, 91, 136, 183, 230, 269, 316, 365
AZA Eastern Regional Conference 6, 48
AZA Western Regional Conference 6, 48, 91
AZAD Delegates Meeting and National Conference 463, 506
AZAD Regional Conferece #1 136,183, 230, 269
AZAD Regional Conferece #2 136,183, 230, 269, 316, 365

BIERZS The Symposium 2007 Bear Information Exchange for Rehabilitators, Zoos, andSanctuaries 365, 412, 463, 506
Callitrichid Behavioral Husbandry and Management Workshop 136, 183
Interntaional Conference on Environmental Enrichment 136, 269,316, 365, 412, 463, 506

First European Congress of Conservation Biology 6
Managing Animal Enrichment and Training 6, 48, 91,136, 183, 230, 269, 316, 365, 412, 463
The Mind of the Chimpanzee 506
Nutrition Advisory Group 2007 Annual Conference 504
Okapi Keeper Workshop 463, 506
Old World Mokey Workshop 463, 506
PJC Offers Zoo Animal Technology Program 47, 88
Second International Congress of Zookeeping Announcement 6, 48, 70, 91, 136
ICZ Logo Contest Deadline 6
Registraion 10
Techniques for Butterfly Conservation and Management 6,48, 91, 136
Tenth Elephant Ultrasound and Veterinary Procedures Workshop 6, 48, 91, 136, 183
Third Annual Workshop on Ultrasound and Assisted Reproduction in Elephants and Rhinos 506
Third International Tapir Symposium 6
Third Protected Contact Training and Enrichment Workshop 48, 91, 136, 183
Turtle Survival Alliance 4th Annual Conference 183, 230, 269, 316
Understanding Agriculture's Effects on Amphibians, Turtles and Reptiles in a Changing World 463

Conferences-Schools-Workshops (cont'd)

Zoos and Aquariums Committing to Conservation 91, 136, 183, 230, 269, 316, 365, 412, 463, 506

Conservation/Legislation/Zoo News

$6.9 Million in Private Stewardship Grants Announced 345
53 of 61 Smuggled Orangutans Will Be Sent Home Soon 240-241
Amazon Protected Zone Twice as Big as Belgium 153
Amphibian Tree of LifeAvailable Gratis 179
And the Indianapolis Prize Goes to... 426
Ape Meat Sold in U.S., European Black Markets 408
Basin Pygmy Rabbit Death in Error 306
Birdlife Botswana Probes Bustard Poaching 116
Cambodida: Flock of Endangered Birds Found 240
Cameroon Wildlife Sanctuary Awaits "Taiping Four" 542
Captive Gorillas Succumbing to Heart Disease 456
Celebrity Fish Dies at Chicago's Shedd Aquarium 449
Central Africa's First Debt-for-Nature Swap Invests $25 Million for Tropical Forest Conservation in Cameroon 348
Chester Zoo Announces 2006 Richard Hughes Scholarship 88
Chinese Wolves to Cut Blue Sheep Numbers 152
Concern About Kenyan Wildlife Exported to Thailand 217
Detection Kit Battles Trade In Bear Parts 218-219
Drought Puts Kenya's Wildlife at Risk 115
Eight Wild Gorillas Born in Uganda 345
Elephants Grow Reflective in Zoo 544
Experts Warn Tigers Face Extinction 495
Federal & State Spending on Endangered Species Reported by USFWS 118
From the Believe It or Not Department 154
Fruit Bats May Cary Ebola Virus 57
Gorilla Study Disproves Menopause Theory 154
Grizzly-Polar Bear Hybrid Found 307
Grizzly Bears May Lose Protected Status in U.S. 24
Haifa Zoo's Animals Struggle with War 407-408
Higher Standards for Farm Animal Welfare Adopted 71
In Memorium: Marvin Jones 1928-2006 180
In Memorium: Marvin Jones 1928-2006 Correction 227
Interior Dept. Claims Gray Wolves Recovered from Extinction 216
In the Classification Kingdom, Only the Fittest Survive 56
Israeli Caves Yields Previously Unknown Species 308
Keeper Requests Information on Bladder Stones in Reticulated Giraffe 393
Keeper's Alert, Assisance Sought 199, 259
Kenya May Bring Back Hunting 115-116
Kitty Litter Imperils Sea Otters 217
Last Stand of the Hippo as Rebel Militia Slaughter Hundreds a Week 541
Lion Population in Kenya Threatened with Extinction 345-346
Lions in India Get Old-age Home 347
Living Fossil' Found in Laos 219
Long-time Legislative Advisor Retires from *AKF* Column 411
Loss of a Global Icon for RhinoConservation 271-272
Malaysian Orangutans Near Extinction 152
Map Turtles Become 1st Native US Species Named to Appendix III 71
Marvin Jones Memorial Fund Established by ZRA/ISIS 363
Mexican Gray Wolf Imperiled by USFWS Activity 25
Midterm Report on the 109th Congress 242
Millions in Coastal Wetlands Grants Announced by USFWS 72
Monkey Find May Establish New Family of Primates 305-306
Moth Threatens China's 'Green Olympics' 218
Myanmar Faced with Tiger Extinction Threat 116
Nepals' Rhinos and Tigers Show Alarming Decline 305
New Big Game Hunting Regulations in South Africa 243
New Finch Species Discovered in Andes 542
New Program Hopes to Increase Tiger Numbers by 50% 405
New Terrestrial Mammal Found in Europe 543
Opportunity for Keepers to Participate in Grevy's Zebra Field Conservation 267-268
Park Closure to Protect the Mountain Gorilla 308
Panda Births Set Record 97
Poisoning Suspected in Elephant Deaths 153
Polar Bear Hunting to Commence in Greenland 71
Polar Bears Considered for ESA Listing as Endangered 216-217
Proposal to Kill Elephants Splits Wildlife Groups 27
Proposal to Remove Mexican Bobcat from List of Threatened Species 346
Proposed Regulations to Implement CITES in U.S. 242
Protection for Puget Sound Orcas Acquired 117
Protection of Endangered Species on U.S. Military Installations Subject of Agreement 119
Protection Sought for Desert Bald Eagles 241
The Ratite TAG Needs You 483
Report of Last Male Columbia Basin Pygmy Rabbit Death in Error 306
Reproductive World First forAustralian Zoo 544
Researchers Receive $1.4 Million From Disney Wildlife Conservation Fund 406-407
Review of 108th Congress Animal-Related Legislation 25
Rocky Mountain Population of Gray Wolves Proposed for Delisting 116
Rwanda: 'Gorilla Wall" to be Completed Soon 347-348
San Diego Zoo Rescues Bushmeat' Monkeys 306-307
Settlement Agreement Protects Against Pesticides 543
Smuggled Birds Taste Freedom Again 217

Conservation/Legislation/Zoo News (Cont'd)
Socializing Helped Ebola Wipe Out Gorillas 406
Spain has First Beluga Born in European Zoo 544
Stingray Kills Crocodile Hunter, Steve Irwin 445
Study Endangered Cats in Mexico 87, 363
Study Finds Global Warming is Killing Frogs 117-118
Study Reveals Male Monkeys Prefer Toy Cars, Females Like Dolls 119
Study Shows Global Warming May Be Causing Cannibalism in Polar Bears 346-347
Sumatran Rhinos Believed Poached 7
Suspect Science Defeats Protection of Miami Blue Butterfly 24
Swedish Storsjoodjuret Loses Endangered Species Status 24
"Taiping Four" Gorillas to Return to Cameroon 493-494
Test-tube Koala Joeys Produced 542
Thai Coup Delays Indonesia Orangutan Return 495
Uganda's Effort to Curb Ivory Trade Receives Boost 217
UN Calls for Closures to Protect Sea Turtles 26
Universities Federation for Animal Welfare (UFAW) Wild Animal Welfare Award 2007 460
U.S. to Study Polar Bear Habitat/ Global Warming Connection 153-154
USFWS Finds Listing of Polar Bears as Threatened May be Warranted 118
Video Cam Features Bald Eagle Chicks 243
West African Black Rhinos Feared Extinct 405-406
Whale Song a Criteria for Mate Selection 153
What Do We Lose if We Lose the Frogs? 492-493
Why Zoos and Aquariums Matter 504
World's Oldest Tortoise Dies at 176 317
Yangtse Dolphin Becomes a Victim of China's Success 218
Zoo Atlanta's Lun Lun Gives Birth 494
Zookeeper Internships at the Cheetah Conservation Fund 107-108

Enrichment Options
2005 Lee Houts Environmental Enrichment Reward Recipient 435
Buoy Enrichment at Lincoln Park Zoo 190
Call for Submissions 68, 165, 253, 344, 478
Chimp Haven's Integrated Enrichment Program 251
Community Involvement in Behavioral Enrichment at the Phoenix Zoo 12-16
Enrichment Day Success - Beyond our Expectations 100-102
Enrichment is Dead! 162-164
Environmental Enrichment for Amphibians and Reptiles 374-384
Examples of Text from Enrichment Graphics at Folsom Zoo 477-478
Get the Ball Rolling! How to Create theFramework for a Successful Enrichment Program 65-67
Ilana Rosenberg's Goeldi's Monkey Puzzle Feeder 288-289
Shorebird Enrichment at the Milwaukee County Zoo 342-343
TREE Award Program: Growing New Ideas for Motivating Staff in Training and Enrichment Programs 519-521

Leather Elves Enrichment Device Contest 68, 165
Lee Houts Enrichment Excellence Award 68

Miscellaneous
2005 Index 38-44
2006 Conservation Endowment Fund 121
2006 Debbie McGuire Gorilla Keeper Grant Recipient Announced 459
AKF Seeks Legislative Advisor 459, 504
Gorilla Gazette Available as E-Newsletter 179
HerpDigest is Back - Gratis 476
Keeper Alert 450
Roadside and Riparian Rigers 411

People Skills for Animal People
Career Advancement in the Zoological Industry Part I Skill Development and the Job Search 326-330
Career Advancement in the Zoological Industry Part II Cover Letters and Resumés 430-434
Career Advancement in the Zoological Industry Part III Interviews 514-518
Performance Evaluations 8-10
Understanding Diversity in Personality and Work Styles - Part I 69-70
Understanding Diversity in Personality and Work Styles - Part II 140-141
Understanding Diversity in Personality and Work Styles - Part III 245-246

Reactions
Crisis Incident Levels in Zoos 531-532
Education Animals and Safety 446-448
Exhibit Landsacping and Animal Safety 279-280
Maintenance Personnel and Safety 479-481
Master Plans and Safety Part I 142-144
Master Plans and Safety Part II 197-199
Master Plans and Safety Part III 234-236
Medical Concerns while Traveling Abroad 391-393
Recommendations for Winter Operations 79-81
Refining Dive Operations Policies 18-19
Stress and Fatigue in the Workplace - Revisited 359-360
Utilization of Unscented Products 103-104

Website/Listserves
2006 AAZK Conference Website 4
AAZK Animal Data Transfer Forms Available On-line 231, 298
All Aboard the Digital Ark 443
Center for North American Herpetology Announces PDF Library 481
New Addition to Australasian Zookeeping Website 460
On-line Newsletters 411
Ratite TAG Opens Listserve, Premiers New Logo 108
Zoo Moms Support Group 503

AAZK Membership Application *(Please Print)*

check here if renewal [ ]

Name _____

Email _____

Mailing Address _____

City _____ **State/Province** ____ **Zip/Postal Code** _____ **Country** _____

U.S. Members

- ☐ **$40.00 Professional** *Full-time Keepers*
- ☐ **$35.00 Affiliate** *Other staff & volunteers*
- ☐ **$35.00 Associate** *Those not connected with an animal facility*
- ☐ **$65.00 or up** - *Individuals* **Contributing/U.S.**
- ☐ **$125.00 or up Institutional/U.S.** *Organizations/Institutions (requires Board approval)*
- ☐ **$125.00 Commercial Members** *(i.e.Animal-related food & supplies)*

Canadian Members

- ☐ **$40.00 Professional** *Full-time Keepers*
- ☐ **$40.00 Affiliate** *Other staff & volunteers*
- ☐ **$40.00 Associate** *Those not connected with an animal facility*
- ☐ **$65.00 or up** - *Individuals* **Contributing/Canada**
- ☐ **$125.00 or up Institutional/Canada** *Organizations/Institutions (requires Board approval)*
- ☐ **Library Only** **$40.00 Library** *Available ONLY to public & university libraries (in U.S.)*

International Members

☐ **$55.00 International** *All members outside U.S. &Canada regardless of category*

Zoo Affiliation (if any) _____

Zoo Address _____

Title _____

☐ **My check is enclosed (AAZK, Inc.)** ☐ **Please charge my credit card**

MASTERCARD **VISA** **Card #** _____ - _____ - _____ - _____

Name on card _____ **Expiration date** _____

Signature _____

Mail this application to: AAZK Administrative Offices, 3601 S.W. 29th, Suite 133 Topeka, KS 66614-2054. Make checks/money orders payable to AAZK, Inc. Must be in U. S. FUNDS ONLY. Membership includes a subscription to *Animal Keepers' Forum*. The membership card is good for free or discounted admission to many zoos and aquariums in the U.S. and Canada.

AMERICAN ASSOCIATION of ZOO KEEPERS

"Dedicated to Professional Animal Care"

3601 S. W. 29th St.
Suite 133
Topeka, KS
66614-2054
U.S.A.

Return Service Requested

Non-Profit Organization
U.S. POSTAGE PAID
Topeka, KS
Permit # 646

**********MIXED AADC 640
9/07 GRP 1
National Zoo Library TRAY 12
Visitors Center - MRC551
P.O. Box 37012
WASHINGTON DC 20013

Animal Keepers' Forum
iversary
2004